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Fifty-third Annual Session, Norfolk, Va., October, 1922

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Original Communications

WORK OF THE STATE BOARD OF HEALTH

By ENNION G. WILLIAMS, M. D., Richmond, Va.
State Health Commissioner.

In the first place I wish to thank you for the privilege of appearing before your Society to tell you about the work of the State Board of Health. We believe that the State Board of Health and the medical profession should maintain a close relationship. Public health work should be regarded as a specialty of medicine. All medical specialties have grown and developed in recent years and the specialty of public health has been no exception to this rule. Its development has been limited practically to this generation, although its beginning may be placed in the generation preceding us. In that generation, little was known concerning the cause and prevention of disease. As the result of discoveries in our time, this has become the best understood branch of medicine.

Boards of health were first organized not so much to prevent diseases as to check epidemics after they had started. The functions were limited virtually to epidemics of smallpox, typhus fever, cholera and yellow fever. As epidemics occurred at more or less long intervals, no officer of the board was expected to devote his full time to the work. It was expected that the work of a board would be done by practitioners of medicine. During the seventies, threats of Asiatic cholera, typhus fever and yellow fever caused many States and cities to organize boards of health. During the eighties, Louis Pasteur announced his wonderful discoveries of the relationship of the microscopic organisms to disease. During the nineties further discoveries were announced. Active discussions took place in regard to the merits and values of these discoveries.

In the first decade of the twentieth century this knowledge was being put into actual practice. Gorgas, by his work at Panama, awakened the world to the possibility of these discoveries. It was then that many States and cities of the Union re-organized their boards of health to take advantage of the new knowledge. The State of Virginia was one of the first States to reorganize its health board along modern lines. This was done by the Legislature in 1908 and the new law went into operation in July of that year.

Upon assuming the responsibilities of the Executive Officer, I visited several of the other States to see what their health departments were doing. I was surprised and disappointed to find how variously they were organized and what little uniformity there was in the work. My conclusion was that all were in the pioneer stage and that each had to work out its own problems.

The original force of the State Board of Health consisted of the Commissioner, an Assistant Commissioner, a Bacteriologist, and one clerk.

Laboratory.

In order to get promptly in touch with the doctors of the State and to give them some tangible benefit, the laboratory was organized. There has been a steadily increasing appreciation of the services rendered by the laboratory. In the first year 3,480 examinations were made, and in the last year 20,000. The examinations carried on at the laboratory include bacteriological and chemical examinations of water, diagnostic examinations for diphtheria, typhoid, tuberculosis, malaria, intestinal parasites, syphilis, gonorrhea, meningitis, etc.

Educational Publicity.

From the very start it was realized that education and publicity work should be one of the

*Read before the Southwestern Virginia Medical Society at Pulaski, May 10, 1922.

most important activities of the State Board of Health. The best way to secure general results is to let the people know what are the causes of diseases and how these diseases may be prevented. Health work cannot be effectively conducted solely through the enforcement of laws and regulations. While the prevention of certain diseases may be effected by community effort through the enforcement of laws, the causes of diseases and the methods of their transmission are frequently too closely related to the personal habits of individuals to be regulated by laws. Furthermore, it is not always possible to enforce measures merely because they are laws; people must believe in the wisdom of such regulations before they will submit to them.

The need for education is even more deeply rooted. It is impossible to obtain the needed laws or secure money for their enforcement until the legislative bodies understand them and believe in them. So, if our task were only to reach the legislature, this educative work would be necessary; for, while representatives are more or less responsive to the will of the people, they will not usually pass acts when they are uncertain of the wisdom lying behind the effort. We have published popular bulletins on virtually every important phase of health work in Virginia; and these have been widely distributed. All members of our staff have devoted much of their attention to giving of health lectures and addresses. Many of these have been illustrated by stereopticon slides; some of them are now being illustrated by motion pictures. We have found that these are excellent methods of entertaining and instructing audiences. To an extent, we have utilized the poster methods. Along four thousand miles of Virginia highways we have tacked metal signs, each emphasizing some health principle, while in every school room in the State there has been placed a placard carrying two simple rules which, if followed, would go a long way toward preventing a group of diseases that we have been ineffectively attempting to prevent through quarantine.

Rural Sanitation.

It early became evident that public health in a territory like Virginia's, with its mild climate and long outdoor season, would have to be concerned largely with typhoid fever and other filth-born diseases including intestinal parasites. This group of diseases offers an excellent field for health work since it must be apparent that illnesses which are caused by the eating or drinking of human filth can be reduced or even eliminated when such filth is so disposed of as to be inaccessible either to water supplies or to insects that might carry it to human beings. Our work in that line has been confined principally to the rural sections, for the cities have taken care of their own problems.

In 1910 we organized the Bureau of Rural Sanitation. Dr. Charles Waddill Stiles, of the U. S. P. H. S., had demonstrated the prevalence of hookworm disease in the Southern States; and Mr. Rockefeller contributed a million dollars to help the States afflicted with that trouble. Virginia shared in this gift. To give an idea of the necessity for this sanitary work, we may take the results of a survey made in rural Virginia. Twelve thousand premises were inspected. Thirty-nine per cent of the homes had no toilet arrangements of any kind—no method of disposing of filth. Less than one per cent had arrangements that properly could be called sanitary; that is, less than one per cent were so equipped that human filth could be disposed without endangering the source of drinking water and without being accessible to flies. Our work began with this survey. What had preceded was mere foundation work; but after the survey we went ahead directly at controlling this most serious problem. We inaugurated short campaigns, a few weeks of intensive work in many counties of the State. They were directed primarily at hookworm disease.

In 1919 we started a policy, which has proved gratifyingly popular. The State, the U. S. Public Health Service, and the county co-operate to maintain a sanitary officer who devotes his entire time to securing better sanitation for the county. This we regard as the most important first step in health work.

In co-operation with the International Health Board, the State also aids counties in the establishment and operation of full time health organizations which devote much of their energies to the solving of the sanitary problem. (A more extended explanation of these co-operative plans will be given later in this paper.)

I cannot, however, leave this subject with mere generalities. We have had convincing proof of the value of our work in this line. For the year ending October 1, 1909, our sickness record for typhoid, a typical disease of the group, showed an estimated total of 14,-

398 cases. Using the same basis for estimate, our record for the year ending October 1, 1920, was 2,493 cases. Unfortunately, we have not available the mortality tables for the same period, since our Bureau of Vital Statistics was not organized until 1920; but the typhoid death record of 1913 was 709, and the record for 1920 was 260.

Morbidity Statistics.

One of the first measures was to determine as far as possible the number and distribution of the cases of communicable diseases in the State. This was begun by sending every month to every doctor a return post card on which the doctor was requested to give the number of cases of certain diseases. This system is not ideal; it may not be the best, but it has seemed the most practicable. It tells us approximately the number and distribution of the cases and enables us through the doctors to concentrate attention in certain communities, particularly when epidemics occur. We would like to improve this system by getting the names and addresses of the patients, or households.

Biological Products.

Soon after the reorganization of the State Board of Health, it became apparent that a number of deaths from diphtheria were due to the inaccessibility of diphtheria antitoxin. The high retail price put it beyond the reach of many poor people.

The State Board of Health was able during the first year to make arrangements with the manufacturers to sell antitoxin and other biological products through the State Board of Health at a price of about one-third of the prevailing retail prices. Other biological products that have been made available in the same way are smallpox virus, typhoid vaccine, whooping cough vaccine, tetanus antitoxin, rabies vaccine and antimeningococcus serum. These prices now are so low as to be within reach of practically every one. For indigent cases, most city councils or boards of supervisors will bear the cost in order to save a life. More recently, we have been able to make antitoxin still more available by offering to physicians a small amount of antitoxin to be kept on hand and paid for when used, the only other condition being that the physician will carry it in his medicine bag. A physician recently told me that this plan, he was sure, had been the means of saving a life in his practice; that he was called a long distance to see a patient and upon arriving found the patient was beginning with an attack of laryngeal diphtheria; and that, by having antitoxin in his medicine case, he was able to check the progress of the disease; whereas the many hours that would have elapsed for him to have gotten antitoxin from the nearest store or distributing station would probably have permitted the laryngeal case to have progressed too far to be checked.

Tuberculosis Sanatoria.

At the time the State Board of Health was organized, the Legislature directed it to establish a sanatorium. In July, 1909, Catawba Sanatorium was opened with a capacity of sixteen patients. This has been gradually increased until now it has a capacity of three hundred patients.

In 1914 Piedmont Sanatorium was opened for colored tuberculosis patients, and that now has a capacity of 100. On account of the great need for sanatorium treatment, a second sanatorium was authorized in 1918. This resulted in the establishment of Blue Ridge Sanatorium, near Charlottesville, which can at the present time accommodate 160 patients. Because of the large number of consumptives in the State, approximately 130,000, it is realized that the sanatoria can only help a small proportion of the victims. They must, therefore, be used for demonstration and educational purposes. All patients who go to a sanatorium are instructed how to take care of themselves and what measures to take to keep from infecting others. After a patient has been at a sanatorium for several months and started on the road to recovery, he can then return to his home and others can be treated.

To reach the many victims who cannot go to a State Sanatorium, the State Board of Health now conducts tuberculosis clinics throughout the State, having a specialist in tuberculosis conduct these clinics in co-operation with local doctors. We have been delighted to see the success with which these clinics have met. The doctors have cordially welcomed this specialist and have not only attended and co-operated in the clinics, but have had our specialist consult with them in a number of their private cases. No fee is charged by the specialist for these consulting services.

Sanitary Engineering.

In the fall of 1910 the State Board of Health was able to organize the Bureau of Sanitary

Engineering and to engage the services of a sanitary engineer for his whole time. Generally speaking, the functions of the Bureau were first to make a systematic investigation of all the public water supplies in the State and also the methods of sewage disposal, and, second, to consult and advise with local authorities in order to make improvements in the water and sewage systems. The Legislature of 1916 increased the authority of the State Board of Health by providing for the issuance of permits of the State Board of Health for new and enlarged water works and prohibiting the installation of such works except with the consent of the Board. Provision was also made for such changes in existing systems of water supplies as were necessary to protect the health of water users. As a result of this Act, there has been a steady improvement in the 180 public water supplies of the State. Samples from all the water supplies are regularly examined. It is interesting to note that last year was the first year during which no epidemic of typhoid fever could be traced to a public water supply in Virginia. About one-third of the people of the State drink water from these public supplies and their improvement and protection has been a large factor in the reduction of typhoid fever, and in lowering the general death rate of Virginia.

Vital Statistics.

The Legislature of 1912 passed an Act requiring the registration of births and deaths. During the past year 66,010 births were recorded and 30,652 deaths. This gives a death rate of 13.27 for the State. Among the interesting features shown by the Vital Statistics Bureau has been the decline in deaths from typhoid fever of 709 in 1913 to 260 in 1920; from malaria of 152 in 1913 to 51 in 1920; from diphtheria of 374 in 1915 to 216 in 1918, 334 in 1920. It is difficult to explain why diphtheria should have increased in 1920, but this seems to have been common throughout the whole country. This Bureau also records the number of marriages and divorces in this State. There were 49,502 marriages recorded in 1920. The number of divorces in this State in 1920 were 7,280. This is a great increase over the divorces in 1918, when there were 4,798 recorded. Since the Bureau of Vital Statistics records all births and, therefore, is the only real check we have on midwives, that Bureau has charge of the law which compels the use of nitrate of silver in the eyes of infants. The Bureau distributes the solution free.

Hotel Inspection.

The Legislature of 1910 authorized the inspection of all the hotels in the State having more than ten rooms. Later on the State Board of Health was instructed to inspect all the convict camps. This work has kept one man steadily occupied. At its last session, the General Assembly transferred the inspection of hotels to the Dairy and Food Division of the Department of Agriculture. This was done to prevent a duplication of work, as the Dairy and Food Division was requised to inspect all restaurants, including the restaurants of hotels.

Child Welfare.

In 1914 the State Board of Health was requested to determine the relative physical condition of the children in the rural sections as compared to those in cities. It was thought that the country children were stronger, better physically than the city children, but no survey had been made to determine the conditions. Accordingly, with the help of the International Health Board, an inspection was made of all the school children in one of our counties. The results showed such a high percentage of physical defects that it was thought perhaps the condition of that particular county was unusual. In the following two years, 1915 and 1916, the children in six other counties were inspected. The results were very similar. These inspections, which forecast the results that were later found during the draft for soldiers of the great war, naturally called for some remedial measures. The Legislature of 1916 passed what is known as the West Law, authorizing the inspection of school children and requiring that certain instructions in physical matters be given to teachers and to pupils. The Legislature of 1918 still further strengthened this law requiring the physical inspection of the children by teachers and requiring a certain knowledge of physical inspection and physical education as a prerequisite for a teacher's certificate—these requirements to be subject to the approval of the State Board of Education and the State Board of Health.

To carry out the provision of this Act, courses on these subjects are now given at all the State Normal Schools and in those schools and colleges of the State where prospective teachers are trained. As many of those now

teaching find it impracticable to attend a normal school or college to take this special course required for the teacher's certificate, the State Board of Health is conducting a correspondence course on these subjects. Already more than a thousand teachers have enrolled for it.

The inspections are not medical examinations. At the present time they consist simply of examining the eyes for obvious defects of vision, hearing, the teeth, weight and height. To help solve these school problems, public school nurses were put in.

Mouth Hygiene.

Because of the scarcity of dentists and because of the great need of dental corrections, the State Board of Health requested the State Dental Society to advise the best way to meet the needs. A committee from the State Dental Society made recommendations, which the State Board of Health adopted. A dentist was added to the staff of the State Board of Health. He made a survey of the situation, visited most of the dentists in the State, secured their co-operation and established a number of clinics. Six dentists are now devoting their whole time to these clinics. They go from place to place. These are usually not charity clinics; the people pay, bearing the expense of the clinics. There was also a great need for some plan to have the adenoids and tonsils removed. The State Board of Health has asked the Virginia Society of Oto-Laryngology and Ophthalmology for some practical plan for conducting these clinics. This Society appointed a committee last fall, but has not given us any constructive recommendation, so the State Board of Health has no definite plan for such clinics. They are now being left entirely with the local authorities to make such arrangements as they can to have the children needing the work attended to.

Orthopedic Hospital.

The epidemic of infantile paralysis of 1914 left many little victims that needed orthopedic treatment. Dr. W. T. Graham, the orthopedic surgeon in Richmond, in the winter of 1918 had more than a hundred patients attending a free clinic that he held at his private office. He said that if the State would provide quarters for the cases needing treatment, he would give his services free. The Legislature gave $10,000, and arrangements were made with the Memorial Hospital of Richmond to care for the patients. This appropriation was entirely inadequate to take care of all the patients that applied. To meet this need, the people of Richmond organized an association and raised more than $20,000 to continue the work. The last Legislature supplemented this appropriation by $15,000 additional.

Public Health Nursing.

The inspection of school children showed definitely the need of school nurses, to assist the teacher to make the inspections and particularly to carry on the follow-up work. Furthermore, the scarcity of doctors in the rural sections opened up a field for the nurses. The influenza epidemic also showed the need of some one to teach people how to care for the sick when no trained nurse is available. The public health nursing work promptly took so strong hold upon the people, that at present time there are 178 public health nurses in the State with the following distribution:

City school nurses	33
County school nurses	30
General public health nurses	75
Industrial nurses	17
Child Welfare nurses	6
Clinic nurses	8
Tuberculosis nurses	9

There is a demand for still more.

Let us consider what are the duties of a public health nurse. Her field of usefulness is wide and varied. The public health school nurse in the first place assists the teacher in the inspection of school children. It was at first thought that the nurse alone could conduct the inspection, but we soon concluded that the teacher would better do this. The physical inspection is not a medical examination. Any intelligent teacher can determine whether a child can read what is written on the blackboard, or whether the child is deaf, or has defective teeth, or is underweight. The nurse can give the necessary instructions to the teacher, who thereafter can make these inspections herself, so that the nurse's chief duty is to conduct the follow-up work and persuade the parents to have the defects corrected. As a friendly visitor to the homes of the children, she can explain to the parents the importance of correcting any physical defects and can aid them in having it done. She arranges for clinics when necessary. At clinics arranged for by these nurses last year, the dental defects of nearly 10,000 children

were corrected: at the adenoid clinics more than 600 children have been operated upon. The work of the school nurse, beside its humanitarian aspect, is a matter of school efficiency and economy. Many a child fails on his studies and repeats his grade because of some correctable defect. Many and pathetic are the incidents related by nurses.

One teacher told me that she whipped a boy every day for two weeks for inattention and at the end of that time she found that the boy was deaf. A nurse recently told me of another incident, which I will relate. In the school was a boy whom the children called "Crazy Bill." He was larger and older than the children of his grade. In fact, although he had been going to school for several years, he had never progressed beyond the first grade. He was looked upon as stupid; and the teacher, taking for granted that he was feeble-minded, did not trouble herself with him. A nurse, while inspecting the children, found that his vision was so defective that he could not read what was written on the black board and was totally deaf in one ear. The defective vision was corrected, and the teacher, knowing that he was deaf in one ear, acted accordingly, and the boy after that time made his grades regularly. I could tell you of other similar stories where the correction of physical defects turned the whole current of a child's life. Dr. Brumfield, Resident Physician and Professor of Public Health, at the Virginia Polytechnic Institute, recently told me that a young man in college came up to him and reminded him that some years before Dr. Brumfield had examined him in one of the schools, found that he had hookworm, and relieved him of it; and the young man said that unless he had done so, he would not then have been in college.

Many of the public health nurses combine school work with district nursing work. The school nurses also conduct classes at the high schools in home nursing work, instructing the high school girls and also mothers in the home care of the sick. Some public health nurses devote most of their time to house visitation of the sick, showing members of the family how to carry out the doctor's orders, how to do the many little things that make a patient comfortable—as giving baths, changing bed clothing, taking temperatures, and the many other little things in a sick room that make the difference between comfort and discomfort, and even between life and death to the patient. She can tell the young mother how to carry out the doctor's orders, how to feed, clothe and care for the baby. Many good offices does this friendly visitor with her professional training administer in her daily rounds. She must not make diagnosis or prescribe treatment except in emergencies when it is impossible to secure the services of a doctor.

Since the health department in the City of Richmond put on the infant welfare nurse, the deaths from summer complaint among the infants have been reduced to just about one-half. The nurses find many cases that they refer to the physicians. The nurse from Wythe County, within the last year, has sent eleven children to the Orthopedic Hospital. The nurse in Pulaski County gathered thirty cripples from all parts of the county and had an orthopedic surgeon from a distance to come and examine them. Those needing operative treatment were sent to the hospital. The nurses, by urging suspicious cases to go to a doctor, have located many a victim of tuberculosis in its early stages, thereby enabling the patient to be cured by prompt treatment.

I recall that in one county, where a supervisor was bitterly opposed to appropriating any funds for a nurse, he was later converted. The nurse had found in a school a child with tuberculosis, and had the child sent to a sanatorium where it was cured. The supervisor said that that one instance justified the whole expense of a nurse—the saving the life of that child. Thereafter, that supervisor voted for the nurse. This little incident that influenced the supervisor was but a part of one day's work of that nurse.

Another rapidly developing field for public health nurses is the industrial nursing work. A number of large factories and employers of labor are putting on nurses to care for their employees. One of the large factories in Richmond two years ago put on a nurse to look after the women employees. As a result, before the year was out, the company was so enthusiastic about the work of this nurse that they employed a second one. The chief officer of the company said that a nurse saved his company a great deal of money by increasing the efficiency of the workers and reducing loss of time on account of sickness. The nurse, being on the job all the time, was able to advise with the employees about many of their

minor ills, which, being properly attended to, prevented them from losing time or having more serious illness.

I trust that I have given you some idea of the field of usefulness of the public health nurse. She assists the doctor in relieving the sick and suffering and, in doing so, teaches others how to do the same; she is a friendly visitor in those homes where her advice and help are appreciated; she shows the mother how to care for the baby and to rear her children; she aids in getting removed those handicaps that prevent children from growing and developing; she is a messenger bringing the glad tidings of how sickness can be prevented and health and strength promoted; she is an economic factor in making efficient the work of the laborer and saves money to the schools by preventing loss through absence of the pupils and the consequent repetition of grades. It is no wonder that the services of the public health nurse are in increasing demand, and there is no field of usefulness that offers so great an opportunity for service to their fellow men as that of public health nursing.

Malaria.

We have on our staff a malaria specialist, who devotes all of his time to combating this disease, which is so prevalent in certain sections of Tidewater Virginia. This work is carried on in co-operation with the U. S. P. H. S. and the International Health Board. Any community that will put up funds for this purpose will have this amount matched for conducting the work. A survey of the local situation is first made by a representative of these services, who will determine just what work is necessary to eradicate malaria in a community and what the cost will be. The community is asked to put up half and the other organizations mentioned will put up the other half. In several communities this work has been conducted with wonderful success. After a year's demonstration the work is usually conducted by the local authorities.

State Aid For Local Work.

There are three plans of organization for county health work to which the State gives financial aid. The first is in the employment of a sanitary officer. If the county will put up $1,500 for a sanitary officer, the State will add $1,000. This fund of $2,500 pays a sanitary officer and provides an automobile and other incidental expenses. The sanitary officer is not a doctor, but a layman. His field of service is limited. His main purpose is to have every home protect its water supply and safely dispose of human filth. The following is a program of his work:

1. Make a sanitary survey of the towns in the county; recommend such sanitary ordinances as may be necessary for placing these towns in a sanitary condition; secure passage of same by Town Councils; and give all possible assistance in having such ordinances put into effect and carried through to a conclusion. The above relates principally to the passage of a sanitary privy ordinance and the installation and operation of a system for the sanitary disposal of human excreta in towns.

2. Introduce measures for the provision of sanitary closets and a safe water supply at every school in the county. Secure funds for same, supervise the work of construction and see that it is carried to a successful conclusion.

3. Secure the installation of sanitary closets and safe water supplies at individual homes throughout the county as far as possible. The sanitary officer visits the homes and by personal contact with the people explains the work and convinces them of the benefits to be derived from it. In this way he is able to carry on educational work and secure their voluntary cooperation.

4. The creation of popular interest and sentiment for public health work to the end that the county will desire a more complete health organization for the following year or, at least, continue on the same scale.

5. Cooperate with the county board of health and act as its agent in carrying out measures for the prevention and control of communicable diseases.

The second plan is that the State Board of Health will aid any county in putting in a public health or school nurse to the extent of providing $500 if the county will put up the balance of the cost to support her for one year. The duties of a nurse have already been described. The third plan of cooperation is for the support of a complete health organization to consist of a doctor trained in public health work, who devotes his whole time to the work, a sanitary inspector and a public health nurse and a clerk. This plan is carried on in cooperation with the International Health Board, which shares with the State Board

of Health one-half of the total expense of the county budget, which amounts to from $8,000 to $10,000. A full time organization of this kind is what we would like to see in every county.

In conclusion, permit me to say what has been said many times before. Health is a purchasable commodity. The individual may not be able to assure himself uninterrupted good health; but any community, large or small, can be sure of a low sickness rate, if it will pay the price for the insurance. Good health is an excellent investment; and, while the State Board of Health would not counsel extravagance even for such a splendid cause, it is endeavoring to speed the day when there will be adequate local health organizations in every county of Virginia, being certain that such a development will put our State in the top rank of healthful Commonwealths.

SYPHILIS OF THE INNER EAR AND EIGHTH NERVE.*

By GEORGE W. MACKENZIE, M. D., Philadelphia, Pa.

When our mutual friend, Dr. Clifton Miller, invited me to present a paper before your Society, the invitation was accepted with thanks and at the same time three subjects were offered to him from which he was to select one. He selected the one indicated in the title for the reason, I take it, that he appreciates its importance and perhaps, too, on account of the interest I have shown in the subject in the past. Five years ago when I first prepared a paper on "Syphilis of the Inner Ear and Eighth Nerve," there already existed in the foreign literature a considerable amount of valuable data. Notwithstanding this fact, there seemed to be a general lack of interest manifested in this country, evidenced by the sparsity of the literature on the subject and the conspicuous absence of space given to it in the programs of the various medical societies devoted to otological subjects.

In marked contrast to this state of affairs at home, we find Europeans generally quite interested. At the Tenth International Otological Congress, which is to meet in Paris in July, this particular subject will occupy one-fourth the time and attention of the Convention.

*Read by invitation at the semi-annual meeting of the Virginia Society of Oto-Laryngology and Ophthalmology, in Roanoke, April 13, 1922.

When the Politzer School of Otology began to develop the clinical tests of the labyrinthine functions which made the name of Barany famous, the then recent discoveries were applied merely to the study of cases of Middle Ear Suppuration with Labyrinthine Complications; they did not reckon the greater possibilities that were in store for these tests. At that time, attention was given principally to three observations:—

1st, Spontaneous Nystagmus; 2nd, After-turning Nystagmus; 3rd, Caloric Nystagmus. Concerning Galvanic Nystagmus, Barany claimed that it was of little practical value. Accordingly, it was lost sight of by every-one but the writer.

Sixteen years of experience (1906-1922) has proved to the satisfaction of everyone who has given the subject of labyrinthine tests more than passing attention that they are, if you include with them the galvanic test, of considerably more value now, and applicable over a wider range of conditions than they were originally thought to be. In spite of the exaggerated claims put forth by a few enthusiasts as to the value of Barany's more recent investigations into the subject of cerebellar localization, which for a time brought some criticism from the neurologists, there is a definite field for the application of the labyrinthine tests, but not exclusive of the functional hearing tests. May I remind you that everyone in the Politzer School was unanimous in his opinion as to the real value of these tests. Of the two, Functional Labyrinthine Tests and Functional Hearing Tests, they placed no more value on the one than on the other. The decision as to the presence of a diffuse labyrinth suppuration and therefore the necessity for operating on the labyrinth was made on the existence of a combined loss of both cochlear and vestibular functions and not on the loss of one alone. It was for those who came along later, with less preparation, to emphasize the importance of the vestibular out of proportion to the cochlear function. As to the field of applicability of the vestibular and cochlear tests, may I remind you that, a diagnosis of neuritis of the eighth nerve is not possible without them; that, the number of cases of eighth nerve neuritis which require the application of these tests are many times greater than those of labyrinthitis including the suppurative form; that, the cases of syphilitic neurolabyrinthitis alone vastly

outnumber the cases of labyrinthitis of pyogenic origin. A mere glance over the field of medicine will convince one of the vast scope of applicability of these tests, concerning which Barany and his associates little dreamt in 1906. It is, therefore, incumbent upon every practising otologist to become familiar with the so-called vestibular tests, and I may add, too, the functional hearing tests.

Syphilitic disease of the labyrinth is not the same condition as syphilitic disease of the eighth nerve extending into the labyrinth. The latter is the condition to which the writer called attention at the 1920 meeting of the A. M. A. and designated neurolabyrinthitis syphilitca. The etiology, pathology and symptomatology of syphilitic neurolabyrinthitis is well known, about which the writer will have little to say at this time since he has already devoted considerable space to the subject recently. He wishes, however, to emphasize briefly some of the most essential features, which are as follows:

I. Syphilis during the secondary and pretertiary stages, when the virus is widespread, produces a picture resembling more or less that of an acute infectious disease. It is during this period that the nervous system is invariably hit more or less severely (neurosyphilis).

II. Syphilitic infants coming to autopsy reveal positive evidence of a meningo-encephalitis. The meningitis follows the trunk of both branches of the eighth nerve, the cochlear branch as a rule being more severely involved than the vestibular. In a few instances the spirochetes and the characteristic syphilitic infiltrations extend to the spinal ganglion and even the intralabyrinthine spaces.

III. During the stage of generalization of syphilis the cerebrospinal fluid presents certain characteristic changes, including a positive Wassermann reaction.

IV. During this stage, the vast majority of patients present the clinical evidence of eighth nerve neuritis, in some cases so pronounced as to be the most discomforting symptoms (deafness and vertigo) complained of by the patient.

V. Syphilitic neurolabyrinthitis is a more or less bilateral affection. The principal subjective disturbances are impairment to hearing of that type which corresponds, according to the functional tuning fork tests, to disease of the perceiving apparatus, to wit: diminution of hearing to all tones, more particularly the higher ones, by air-conduction and diminution of hearing to all tones by bone conduction. The Weber test lateralizes to the better hearing ear.

From the standpoint of the vestibular apparatus there is diminution of function; that is to say, the duration of after-turning nystagmus is shorter than normal and the electrical reaction of the nerve to the galvanic current is diminished. In the case of bilateral neuritis of the vestibular nerve, where one side is hit considerably harder than its fellow, there will be a spontaneous nystagmus directed toward the better functioning side.

The above picture corresponds to a particular type of syphilitic affection of the perceiving apparatus but it is not comprehensive enough to include every clinical case of aural syphilis. The writer wishes to call your attention to another form of aural syphilis which is distinctly different from neurolabyrinthitis. For the sake of convenience in differentiation, we may adopt for it the term labyrinthitis syphilitica tarda, the essential features of which are as follows:

1. It appears late in the course of syphilis more often of the hereditary, rarely of the acquired, form.

2. It is possible that some of these cases may have been affected with neurolabyrinthitis at an earlier period.

3. The eighth nerve seems to escape in this type, for the electrical reactibility of the eighth nerve is retained, a most important differential sign that distinguishes it from neurolabyrinthitis syphilitica.

4. In the tardy form of syphilitic labyrinthitis there is frequently evidence of interstitial keratitis, past or impending.

5. The functional hearing test findings are the same in both forms of aural syphilis. The vestibular tests are the same in the two processes with one important difference. In neurolabyrinthitis the galvanic reaction of the nerve is diminished or lost, whereas in labyrinthitis syphilitica tarda, it is retained.

6. The prognosis under vigorous antiluetic treatment is exceptionally good in cases of neurolabyrinthitis syphilitica, much less favorable in cases of labyrinthitis syphilitica tarda.

The limited time remaining will not permit the writer to report cases now. He will reserve them for another occasion; neither will he discuss at this time primary post-syphilitic eighth nerve atrophy for similar reasons.

1831 *Chestnut Street.*

X-RAY IN DERMATOLOGY.*

By C. AUGUSTUS SIMPSON, M. D., Washington, D. C.
Dermatologist to the Episcopal Eye, Ear and Throat Hospital, Providence Hospital, and the Washington Asylum Hospital; Dermatologist to the Washington City Orphan Asylum and St. Ann's Orphan Asylum.

To William Conrad Roentgen, of Wurxburg, the discoverer of X-ray, the world will pay homage as one of the benefactors of man. Even at this late date, twenty-seven years afterwards, we are daily increasing the usefulness of Roentgen ray, and no one can predict what tomorrow will add to the multiplying lesions relieved and cured by this agent.

The history of Roentgen therapy can be divided roughly into three eras,—optimistic, pessimistic, and realistic. At first, carelessness overcame caution and both patients and physicians were burned horribly. By 1906, the profession and the laity realized that an X-ray machine was a most dangerous apparatus and should be used with the greatest caution. Then followed the era of pessimism which lasted until 1910-12. Few physicians cared to undertake any but the most superficial therapy. During this interval, radiography in America was developing and improving at a wonderful rate while X-ray therapy, because of unreliable dosage, unstable tubes, and dangerously long exposures, remained comparatively undeveloped. Kienbock, Holznecht, and Sabouraud had before this developed radiometers, but X-ray therapy in this country had by now become such a hazardous undertaking that few operators cared to rsik their reputation with any great amount of therapy, and none apparently knew or had any practical experience with the Sabouraud pastile.

In the summer of 1911, while working in Dr. Max Joseph's Skin Clinic of Berlin, I was amazed at the ease and precision with which skin lesions were treated with X-ray, using the Sabouraud radiometer. I knew something of dermatology and had just been an intern in the New York Skin and Cancer Hospital which boasted of a good treatment outfit which had done and was still doing about as much damage to the human anatomy as a working X-ray machine is capable of doing. I was so impressed by the X-ray results in Max Joseph's Clinic that I felt then and ever since that one of my greatest privileges was to have gained early and useful knowledge of X-ray therapy from this good natured old German.

On May 8, 1912, almost ten years ago, I read my first paper on X-ray therapy before this Society, when I demonstrated the Sabouraud pastile and Wehnett Cryptoradiometer. I gave the technique, scheme, and division of an erythematous dose, for the various skin lesions and cancer, employed in Max Joseph's Clinic. This scheme of dividing the erythematous dose of ray into fractions, which experience taught were most suitable and effective with certain skin lesions, has stood the test of time. It is the technique employed by myself and a great majority of the X-ray operators of America today. We in this country had nothing to do with the development of this technique; for certain latter day X-ray men to speak of it as MacKee's, or any other American's, is to make ourselves laughable in the eyes of the foreign dermatologist.

If Roentgen ray has been a boon to surgery and internal medicine, it has been more than that to the specialty of dermatology. It has been the greatest single agency for curing skin lesions that has ever been placed in the hands of the skin specialist. Also, it is the dermatologist who most frequently is called upon to administer this dangerous agent in the most accurate, scientific, and exact dosage. The danger and risk incurred in radiography do not nearly compare to the hazard the dermatologist has to face many times daily when, to get an early result, he comes perilously near an X-ray dermatitis and burn. In treating superficial skin lesions without the use of filters, as he very often must, his dosage, care, and skill will be many times more exact than when he treats a deep or even superficial malignancy. At the same time, it must be evident that accurate dosage of ray will avail nothing or may do harm if the diagnosis is at fault. Many times heavy and dangerous treatments are instituted for a skin lesion which a mere beginner in dermatology knows to be wrong; so that diagnosis, accuracy and results are closely interwoven in X-ray therapy as practiced by the modern dermatologist. One might say that rather than give too large a quantity of ray it would be better to play safe and give a dose that will at least do no harm. Not only will the physician fail to get a result and lose his patient, but he may also be threatened with a suit as the following instance will show. Miss C. C. D.

*Part of Symposium on X-ray read before the District of Columbia Medical Society, April 12, 1922.

(white) was sent me by Dr. Gerry Morgan. She brought her young nephew to consult me for a scalp lesion of two weeks' duration There were discrete, sharply defined, crusted, and weeping lesions, ranging in size from a pea to a lima bean, which covered the scalp and extended behind the left ear and down the same side of the neck. The spread of the lesion was rapid, each beginning as a blister which quickly broke and crusted over. The disease was impetigo and healed completely in two weeks under two per cent. ammoniated mercury ointment. This patient before consulting me was taken to one of the local hospitals where a diagnosis of ringworm was made and the scalp exposed to a large dose of X-ray. The boy's aunt insisted that she was going to enter suit against the doctor for exposing the child to this unnecessary danger. Fortunately for the radiographer, his treatment was as wretched as his diagnosis and he produced no alopecia. Had he produced an X-ray alopecia and at the same time used a local antiseptic, as he should have done in ringworm infection, the impetigo would have been cured and no one would have been the wiser. Here the physician was about to be sued when he had given a small dose of ray. Had he given enough to produce a temporary alopecia his legal case would have been made much worse. Had he over-dosed the patient as much as he underdosed him, just as possible with a faulty technique, that family would have been drawing rations from our college for the next fifteen years.

X-ray therapy today resolves itself into two questions; does the patient really get any ray, or is the machine set in motion to impress the patient. The time is not far distant when some physicians must either give up Roentgen therapy or else devote enough time and energy to the subject to master it. It is another instance of the failure to fool all the people all the time. The same might be said of radium therapy. Today we have accurate methods of measuring the quantity and quality of ray given off from an X-ray tube. The mysterious and hocus-pocus side of the question belongs to yesterday. Today, the science is exact and standardized. There is no doubt that many patients have high frequency current used on them and are told they are getting X-ray. This and other frauds are committed in the name of Roentgen ray right here in Washington, I am sorry to say.

It is as unfair to compare X-ray therapy of ten years ago to modern radiotherapy as it is to liken pre-aseptic surgery to the present science. Discoveries, inventions, and improvements supersede each other with startling rapidity. Tomorrow may bring forward an apparatus that will make hundreds and thousands of dollars' worth of instruments obsolete over night. When I try to recall the changes in equipment since I began this work ten years ago, I wonder if I am working for the manufacturer or myself. The one small machine, with which I proudly began therapy, is now displaced by three separate X-ray mamines, each in a separate room and each double the capacity of my first outfit with which I believe I secured some fair results. In my practice I have become so dependent on the X-ray, and therapy is taking such a large per cent. of my time, that I have had to employ an experienced associate, who will devote his time solely to deep therapy and picture work. In the past, because I limited myself to therapy, I have been compelled to send my patients to a radiographer in case I needed a picture to detect internal metastatic malignancy. I am also of the firm opinion that therapy and picture work have become so technical, complicated, and different that each should be in charge of different operators using separate and special X-ray machines and tubes. If ten short years have wrought these changes, what may we expect in the next ten, when large manufacturing concerns, electric corporations, richly endowed institutions and universities are employing high salaried investigators who are making concerted study and efforts to improve X-ray therapy? I believe we are on the threshold of some wonderful discoveries that will broaden and improve X-ray treatment.

I believe Roentgen sickness will soon be better understoood and eliminated through the study of blood and tissue chemistry. I also feel that many of the future betterments in our speciality will come through closer cooperation between the X-ray and serological laboratories. This I am anticipating by installing modern apparatus under a capable worker from the pathological department of one of the large universities.

Both X-ray and radium are capable of effecting alternations in elementary substances and in simple, complex organic, and inorganic compounds. This chemical change is atomic

and molecular, apparently brought about through the process of ionization. Biochemical action consists mostly of the effects on fatty acids, enzymes, and ferments. Small doses stimulate, large doses inhibit the production of these substances. Protozoa and bacteria are resistant to radiation, according to MacKee the lethal dose being a large one. The beneficial effects of X-ray therapy in skin lesions are not due to the bacteriolytic action of the ray but to the stimulatnig action upon the tissue cells. Polynuclear cells are more readily effected than the mononuclear. Large doses of ray stop reproduction and produce death of the cell. The biological explanation of the effects of X-ray are not thoroughly understood. Packard believes that the radiations act directly on the chromatin and protoplasm, activating enzymes which produce degeneration of the cell proteins. Young, embryonic, undifferentiated and secreting cells are much more radio-sensitive than mature, inactive cells. The well known clinical effects of the ray in varying doses are antipruritic, anaesthetic, keratoplastic and stimulation of cell divison, atrophy and destruction, the last two effects being selective. The brunt of the damage is borne by the lymphatic system and lesions composed of embrylogical and malignant cells. Soft beta rays are more destructive than hard rays.

If you will pardon my enthusiasm for this subject, I will try to explain just how much modern dermatology is dependent on radium and X-ray therapy. To say that all skin lesions or even a majority of them can be cured by these agents is a mistake, but in the common lesions such as acne, pruritus, and certain types of eczema, one is almost entirely dependent on X-ray for a speedy result. In ringworm of the scalp, almost an incurable lesion with the older prescriptions of antiseptic salves and lotions, one treatment produces a cure. Thanks to the X-ray, ringworm is no longer the terrible disease it once was. I do not know if the pediatrician realizes what an economic saving the treatment has produced in this one disease. Thousands of children have returned to schools and association with their friends from which they were exiled. In London and Paris, ringworm schools have been closed and thousands of dollars saved. Simple sycosis is another skin lesion which was almost incurable before we began to use Roentgen ray. It was a common thing to see patients who had suffered from this disease from five to twenty years, all the time going from one dermatologist to another, using vaccines, antiseptics, salves, and lotions in succession. I have cured sycosis of fifteen years' duration with one dose of X-ray. In lichen chronic simplex and lichen planus the results are almost instantaneous, as the following report will show. A widow of a physician, and the mother of a physician, had a patch of lichen chronic simplex on the calf of her leg for 42 years. She had consulted dermatologists, surgeons, and internists, for all of these 42 year, and she had probably used on the lesion every drug known to the profession. One colleague, after trying every antiseptic and healing agent he knew, suggested that she had leprosy and prescribed chaulmoogra oil, with no relief. The lesion was sharply marginated, isolated, indurated, and badly excoriated by her nails. Secondary infection on the skin, which was at least one-fourth of an inch thick, produced a raw, weeping, painful patch the size of a silver dollar, that developed paroxysms of itching that would drive the patient frantic. At times she was all but incapacitated. One exposure of X-ray three years ago healed this lesion, which has remained well ever since. Pruritus of anus and vulva is very often relieved and banished when every other therapeutic agent has failed. I regard many of these lesions as neurodermatitis, closely related to lichen chronic simplex, for which X-ray surpasses every other known therapy. Not so many years ago, our colleagues poked fun at us in not being able to cure acne, the most common skin disease known. Now we know that there is not a single case of acne that cannot be cured, because we can atrophy the sebaceous gland which is infected and hypertrophied in this disease. Occasionally, the Kromayer and Alpine lamps seem superior to X-ray here, but in the usual case I use them in the interval between X-ray exposures solely to quicken the result.

Ordinary primary untreated epitheliomas have ceased to be the cause of concern in dermatological practice; close to 100% of cures are obtained with one to two massive doses of ray. As I said before this Society last year, the modern dermatologist who really is willing to give heavy doses of Roentgen ray undertakes the treatment of an uncomplicated skin cancer with less concern and more confidence than he does the cure of a well developed ec-

zema. Besides these lesions mentioned, many other skin diseases such as favus, blastomycosis, actinomycosis, seborrhea dermatitis, psoriasis, prurigo, granuloma fungoides, leukemia cutis, Hodgkin's disease, the various forms of cutaneous tuberculosis and scrofulodema, lupus, warts, leukoplakia, Kraurosis vulva sarcoma (Kaposi), and Paget's disease, are benefited by Roentgen ray. It many not be the sole, outstanding, single therapeutic agent to employ in many of the less common dermatological lesions, and yet at the same time it may be of inestimable value if used in conjunction with other therapeutic measures, when striving for the relief and cure of our patient. I will repeat that the Roentgen ray has been the greatest single therapeutic asset ever placed in the hands of the dermatologist. *Washington Radium and X-ray Laboratory, 1610 Twentieth Street, Northwest.*

RAMBLING REMARKS IN RE APPENDICITIS.*

By STUART McGUIRE, M. D., Richmond, Va.

Appendicitis was first clearly recognized and accurately described by Reginald Fitts, an internist of Boston, in 1886. Before that date the symptoms due to the disease were attributed to gastritis, peritonitis, or inflammation of the bowels. Robert T. Morris said that if a torch was applied to the tomb of every man dying of unrecognized appendicitis the world would be a bon fire. I have often wondered how a condition which was so frequent and fatal could have escaped recognition by clinicians of the past who were justly noted for the accuracy of their observations. The explanation lies in the fact that the symptons of appendicitis, originating in an organ without function, were characterized by reflex disturbance of the function of other and more important organs and hence were misconstrued during the life of the patient. If death ensued and a post mortem was made, the secondary complication so obscured the original lesion that it was overlooked. Dr. H. H. Henkel, of Staunton, told me that, while in New York taking a post graduate course in 1878, he saw a case in the wards of one of the hospitals which was treated first for gastritis, then for peritonitis, and finally for locked bowels. When the patient died, a post mortem was held and the pathologist commented on the fact that the inflammation had been so severe that the appendix vermiformis had sloughed off. Two years later when engaged in private practice, this physician saw another case die with similar symptoms and before making a post mortem he told his colleagues that he was certain that they would find the appendix gangrenous, and such proved to be the case. In neither instance did it occur to any of the physicians that the condition of the appendix was the primary cause of the trouble.

From a surgical standpoint, appendicitis and I are about the same age. Like the rabbit that was born and bred in a briar patch, so I received my earliest professional experience in the midst of a discussion and contention with reference to the cause, diagnosis and treatment of appendicitis, that created as much interest and feeling as did prohibition, woman suffrage, or the recent controversy with reference to the proposed consolidation and location of the two State aided medical schools in Virginia.

At the time of which I speak, the pages of medical journals and the programs of medical societies were almost monopolized by papers on appendicitis, which discussed the influence of age, sex and race, the etiological factor of grape seed and other foreign bodies, the question of whether chronic dyspepsia was a cause or a result of the disease, the possibility of making a definite diagnosis before the development of a mass in the lower right abdomen, whether appendicitis should be regarded primarily as a medical or surgical condition, whether purgatives were beneficial or injurious in the early stages, and finally the indications for operation, and the time at which it should be done. On these and many other points there was great difference of opinion. Murphy, Price, Ochsner and others held joint discussions at the meetings of all National associations that for brilliancy and bitterness have rarely been equaled even in political debate. In Virginia my father, Hunter McGuire, was regarded as a great authority on the subject and in 1892 he published a paper entitled "Seventeen Consecutive Unselected Cases of Appendicitis Operated on with One Death." So great was the local interest in the subject that the Medical Society of Virginia, in order to stimulate study and investigation, offered a cash prize for the best paper presented by one of its members and this was won after a vigorous competition by Dr. E. E.

*Read at the meeting of the Tri-State Medical Association of the Carolinas and Virginia, in Norfolk, Va., February 22-23, 1922.

Feild of Norfolk. The prize essay was published in the Transactions of the Society for 1894 and may be read with profit today. McBurney was the first to advocate the interval operation for appendicitis and to suggest the split muscle incision, now known by his name. He said the method required four assistants and that the work could not be done in less time than one hour.

All this, of course, is ancient history, but it is history that some of us have forgotten and others have not learned. Appendicitis is as frequent today as it ever was, and it is still the cause of many deaths that might be prevented. Most of the problems with reference to its diagnosis and treatment have been solved, but the disease has lost its charm of novelty and I fear the dearly earned experience of the past is not being properly transmitted to medical students or to the new generation of practitioners of medicine.

Recently, in reading the statistics of the operations done at a famous hospital of this country, I was struck with the fact that one-third of all the patients were operated on for appendicitis. I confess that I was astonished at the figures, but an investigation of my own records and an inquiry among certain of my friends showed that practically the proportion was true in Richmond. Surely, a disease so frequent should continue to occupy a large part of our thought and study.

When we come to consider the present mortality of the disease, the results are equally impressive. Certain individual surgeons working under favorable conditions are able to report long series of operations, which include not only chronic but acute cases as well, with a death rate of less than 2%. But this by no means represents the work of the rank and file of the profession. The late lamented John B. Murphy recognized this fact and realized that to arrive at the truth an investigator should not study the records of a few surgeons, but the reports of many hospitals. He, therefore, in 1915 compiled the statistics of the hospitals in the United States that published annual reports, and found that they showed the average mortality rate of appendicitis both acute and chronic was over 10%. When it is remembered that the large majority of these cases were interval operations and that as a rule the hospitals that publish reports are superior to those which do not do so, it is obvious that the mortality of acute appendicitis in the United States today is still very high.

The object of this brief paper is not to discuss the treatment of appendicitis, because it has become standardized with perhaps the single exception of the question whether to operate in the face of an existing and spreading infection or to wait with the hope, sometimes realized but sometimes futile, that there will be a localization of the septic process which will render surgical intervention safer. My object is to emphasize the frequency and fatality of the disease and to urge that it be discussed at our medical meetings and thoroughly taught in our medical schools because, despite all the time and study which has been devoted to it in the past, it continues to cause a large number of preventable deaths. We do not need new facts and theories, but we do need to see that the accepted principles of treatment are universally known and put into practice. Further, publicity is necessary to educate the laity against the administration of purgatives, the family physician on the importance of early diagnosis, and the surgeon on the wisdom of prompt operation.

So much has been written about the unnecessary operations that have been done for appendicitis in the past and so many new diagnostic methods have been introduced to prevent error, that there is a tendency on the part of some surgeons to postpone an operation in a doubtful case until a diagnosis by exclusion can be made. Unnecessary operations are, of course, to be avoided and accuracy of diagnosis to be encouraged. It is admittedly very mortifying to the surgeon if he operates on a case for appendicitis and later finds the patient was suffering from pneumonia, acidosis, pyelitis, or stone in the kidney, but it is disastrous to the patient if he really has appendicitis and the disease is allowed to progress to a hopeless stage while the surgeon is eliminating the possibility of error by x-ray examinations, catheterization of the ureters, and time consuming laboratory tests.

All cases should, of course, have a physical examination of the heart and lungs, a differential blood count and a careful urinalysis. In some cases where there is absence of tenderness or rigidity in the lower right abdomen, a rectal examination or palpation of the loin will show a displaced appendix. These examinations can be completed while the operating room is being prepared and need cause no

delay. If the findings point to appendicitis and the patient's condition is acute I would operate even if the diagnosis was not conclusive. In following this plan I must confess to having made some mistakes but I know I have saved many lives which would otherwise have been sacrificed. An operation in itself carries little risk. If the appendix is innocent the patient will recover and if necessary can be operated on a second time. Better a living mistake than a dead one, although dead men tell no tales and play no part in the reports and statistics of other surgeons.

I wish to make it plain that what I have said applies only to acute appendicitis. Just as I am radical with acute cases, so I am conservative with chronic ones. In acute cases no time should be lost in an attempt to establish a definite diagnosis. In chronic cases no time should be spared to eliminate every possibility of error. The patient's life is not in danger and his restoration to health depends on the location and correction of the cause of his symptoms.

In these cases not only should every possible diagnostic means be exhausted before the operation, but, as a rule, the abdomen should be opened by an incision which will permit of a thorough and complete examination of all its various organs, in order to determine whether the appendix is the real and sole malefactor.

ON THE NATURE AND TREATMENT OF HEMORRHAGIC FEVER.*

By CYRUS THOMPSON, M. D., Jacksonville, N. C.

When I was a callow college lad and academic curricula had more regard for classic sentiment and less for business and the material sciences than our institutions exhibit these latter days, all students who aspired to become educated gentlemen had to study Latin and Greek. To be educated gentlemen then it was necessary, if not to have, at least to have had, a knowledge of these ancient classics. I was, therefore, educated according to the character of my time. I read the orations of our eloquent friend, Marcus Tullius Cicero, whose hatred of Catiline, poor senatorial scoundrel, was no less truculent than the hatred of Demosthenes toward Philip of Macedon. I recall Cicero's Tusculan Disputations. I read laboriously his charming dissertation De Natura Deorum. But I remember nothing very definite about the nature of these forgotten gods. I gathered from my reading, however, that gods, whether Roman, Scandinavian, Hindu or American, resemble their worshipers. Men approach the likeness of the object of their devotion if they comprehend the nature of these objects. Not understanding them, they fashion their gods like unto themselves. Gods, persons and things, in other words, are to us not so much themselves in the absolute as our peculiar selves in fact. With mirrors or without, we are constantly seeing our dear selves—just as the sun, for all the darkness in the universe, sees nothing but his own radiance wherever he lifts his eye.

Pardon these words of philosophic prelude: I am generously trying to justify your mental attitude if you disagree with me in this brief discussion of the "Nature and Treatment of Hemorrhagic Fever."

As to the nature of the malady, I may be wrong when I agree with our neighbors in a South Carolina town, who by way of euphemism and soft impeachment of the health of their community, call it Extreme or Terminal Malaria. As such, however, I have seen it through an experience covering some forty fleeting years. And so it now appears to the vast majority of professional men who have experience with it.

I am aware, of course, that some reputable and observant men see the malady as a distinct non-malarial entity. Quite recently a neighbor of mine held and advocated this view; and some recent textbooks discuss it under the caption of Blackwater Fever, apart from their discussion of malaria. My neighbor's opinion was based upon his own observation. He had seen the malady mainly in communities where, they declared, malaria was not very troublesome and into which the doctor was seldom called to treat malaria.

Admitting his argument as a statement of fact, to me it is rather convincing proof of the malarial nature of Hemorrhagic Fever. Sharply acute attacks of malaria—the severe chill, the high fever, the aching limbs, breaking back and splitting head—these drive the patient to prompt and effective treatment. From this type of malarial attack, little of aftermath is to be expected or feared: its severity makes it benign. In some communities, this type prevails; in others, the type is

*Read before the Medical Society of the State of North Carolina, at Winston-Salem, April 25, 1922.

less acute, and unfortunately too often considered negligible. The attacks are ignored or imperfectly treated. They recur for this reason, and add to their destructive work with every coming. The condition is so made light of, the doctor is not called until the hemoglobinuric culmination of an insidious series of neglected recurrences alarms the patient, when too often the undertaker should be the doctor's chauffeur.

Hemorrhagic fever is as preventable as small-pox. It is a disease not of the careful, but of the careless. I think it may be said without fear of contradiction that hemorrhagic fever (Hemoglobinuric Fever, Blackwater Fever, or Malarial Haemoglobinuria) is never seen as a first attack in a person previously well, but has always behind it a history of repeated neglected or ill-treated outbreaks of malaria. For its development, time and negligence are required. It is never the expression of a new infection. This is true whether the haemoglobinuria occurs in July or in March. Not every such history, of course, eventuates in haemoglobinuria, but whenever haemoglobinuria does come, it comes with such a history always. One severe lesson I derive from this: every attack of malaria is of most serious import, and the mild attacks, it may be, most serious of all. "He that hath ears to hear, let him hear."

Incidentally, I remark that I have never seen a malarial addict with a corn-pone spleen have Hemorrhagic Fever. In all cases, of course, there is enlargement of the spleen; but when I can lift up, so to speak, the heel of the spleen from off the sigmoid flexure, I confidently assure the victim that he will safely enjoy poor health for a very long time.

As to the nature of Hemorrhagic Fever, therefore, what more shall I say? Its nature is the same as the nature of every other malarial manifestation: it is a parasitic destruction of red cells and the liberation of hemoglobin into the blood current. In quality, all malarial attacks are the same: they differ in quantity and in the efficiency of the liver at the time of the outbreak. Every malarial fever, in other words, regardless of its lightness or its gravity, is hemorrhagic. Note the pallor of the face the day following the first chill; no other malady shows so sudden and marked destruction of red cells and waste of hemoglobin. But the liver takes care of the liberated hemoglobin and it does not appear in the skin or the urine. We note only the pallor and the lack of zest. Another time the destruction may be more, or the liver less, active: there is decided haemoglobinaemia, the liver barely converts the haemoglobin into bile pigment, the skin is jaundiced in consequence, but no haemoglobin appears in the urine. Again, the excess of haemoglobin is more than the liver can play clearing-house for, and the burden of the removal of such toxic debris falls heavily, if not diastrously, on the kidneys. Behold now the frightful haemoglobinuria, the dirty, yellow skin, the pitiable plight of this miserable victim who had been careless of the day of small beginnings.

So much for the nature of Hemorrhagic Fever. What now of the treatment? Its prophylaxis may be perfect; but that neglected, we must treat it, when it comes. All malarial expressions being essentially the same, the remedies are the same for all malarial expressions. It matters not whether you have afebrile periodic depression and aching, afebrile periodic neuralgia as the sun-pains of the old folks, or painful and febrile attacks, intermittent or remittent, with normal urine or haemoglobinuria, the remedies for malaria are the same, the details and adjuvants in treatment varying with the gravity of the condition present.

What then are the remedies for malaria? First, the cinchona alkaloids, and their salts, or, as we commonly say, quinine. Second, methylene blue. Third, cacodylate of soda. With or preceding the first of these, comes calomel, of course, for its hepatic effect. For on account of the haemoglobinaemia always present, in whatever degree, and other toxic substances, the liver must always be our best friend at court, and is always deserving our most careful attention. As alterative and reconstructive tonics, iron, iodine, Fowler's solution and the bichloride of mercury may be of service in debilitated conditions following.

Time will not permit me to go into the details of treatment that individual circumstances and developments in a case might reasonably suggest and require. Upon these things we are agreed. The moot question is as to the giving of quinine in Hemorrhagic Fever. In general, therefore, let me say that if I were called to treat a case, I should allay my patient's fear, relieve his pain, and measurably control his miserable recurrent vomiting with necessary hypodermics of morphine

with atropine. I should give him from ten to twenty grains of calomel with an excess of soda. I should follow this in a few hours with a copious saline. I should repeat the calomel and saline whenever repetition seemed advisable. For the purpose of stimulating elimination by the kidneys also, my administration of water would be limited only by gastric tolerance. I might encourage renal output, if failing, by hypodermics of pituitrin. I have seen this relieve anuria of twenty-eight hours duration. And of anti-malarial remedies by the stomach, I would give or try to give, two grains of methylene blue every six hours. This I would give in the form of the methylene blue compound or ordinary gonorrhea tablet. It is more effective in this form and better tolerated by the bladder. If it was ungrateful to this organ, I should reduce my dosage. With the needle, I should give five grains of cacodylate of soda daily for three days, and then on alternate days for a time. Would I give quinine? If my patient had fever I would give him quinine p. d. q.—which by interpretation is to say, as soon as I could, indifferent whether his urine were as clear as the icicles melted that hang from Dian's temple or murky as a spoilt specimen of Welch's kickless Grape Juice. Time was when I would not have said this or behaved this way. Not many years ago, I would have withheld quinine until my patient, dead or alive, was in less urgent need of it. Meantime I would have implored for him the benign intervention of divine grace, while I, myself, in ignorance what to do, sweltered between hell and the iron-works.

I am aware that many capable men would now take issue with me and follow a contrary course They even tell me that attacks of haemoglobinuria not infrequently are precipitated by the administration of quinine to one suffering with chronic malaria; that the remedy, in other words, may cause the disease against which it is given and for which it is universally recognized as most nearly a specific. So easy it is to convert a *post hoc* into a *propter hoc*. If the quinine had been given earlier, the imminent cell-destruction by parasites resulting in haemoglobinuria might have been prevented; given too late to arrest damage already done, why should the haemoglobinuria not appear, why should quinine given so late be charged as the cause of it, and why should quinine not be given none the less to prevent further damage that otherwise will be done? These haemoglobinurias from destruction already done are scheduled to come and will come, quinine given or not; it is manifestly unfair to charge quinine with causing an injury which it had been denied reasonable opportunity to prevent. Whenever, therefore, there is febrile manifestation of malaria, quinine should be given abundantly without hesitation or delay. I have seen it withheld for fear it would precipitate hemorrhage, and directly the hemorrhage came without it. I have withheld it and seen the hemorrhage continue fifty-odd hours. I have administered quinine copiously and seen the hemorrhage cease in twenty-four hours.

Following this course, I am giving my patients a reasonable service. The mortality with quinine is very much less than without it.

Quinine holds its place as our nearest specific remedy in all forms of malaria; but when insufficient dosage has been given and the parasite in some chronic conditions is said to be quinine-fast, then methylene blue is an efficient adjuvant, if not a better remedy.

But how shall quinine be given when the nausea and vomiting characteristc of the disorder make oral administration so uncertain? If it is given by the mouth, the patient, given water and soda, will give you a clean stomach, whose recalcitrance you will control by hypodermics of morphine. For a time I deceived myself with so-called hypodermic quinine,—intra-muscular injections of 7½ grains of quinine dihydrochloride in 1½ mils of solution. We must remember that, in many cases of Hemorrhagic Fever, the parasites all seem to be destroyed with the explosion, the patient sweats, the fever falls, and is gone in a day. In one such case I gave thirty grains intra-muscularly in four hours while the fever was high and the urine like abundant smoky poke-berry juice. Next morning the fever was gone and the urine was clear. On the evident efficacy of this method, I congratulated myself. I had that good inward feeling noted of our little mother-goosey friend, Tommy Horner. Later I found that I had only embossed my patient's gluteal region and added to his assets by bestowing some perfectly good quinine where moths could not corrupt, nor thieves break through nor steal, nor could it leave the seared confines of its resting place to en-

ter the waiting, waltzing circulation. Done aseptically, however, with a long needle straight down, there is no danger of abscess or other untoward event. It remains quietly with small inconvenience where you put it, suggesting the profound serenity of a succulent cherry hid deep in a fancy chocolate drop. If worthless to the patient, this method of administration is helpful to the family; they feel that you are doing all that can be done, that you are up-to-date and abreast of the times, notwithstanding the site of medication. To comfort the family sometime when everything seems to be going dead-wrong, I may give hypodermic quinine again. If then suffering the ennui of defeat, I shall inwardly ask myself what's the use, I shall sorrowfully look my anaemic friend in the face and recall the fate of the Yankee bummer who, just after the War between the States, was killed and buried seclusively in the terebinthinate wilds of Georgia. Some years afterwards, a hunter came one day upon a mound, evidently of human sepulture, hid deep under sighing pines. A lightwood board stood at the western end of the grave. Rude lettering was carved upon the board. After some tedious effort, the lone hunter triumphantly read,

"The Yankees came, a murderous band,
To take from us our Southern land;
Behold this lone sepulchral spot—
'Tis all that this damned Yankee got!"

Abundance of land, but of what use to the Yankee? Occupying only six feet by three, he could not grasp an inch of that. Your canal zone full of quinine and none in your blood, how are you benefited by this method of administration of quinine?

Another method of administration I have tried, of which I sadly confess I am no more enamored, to-wit: the intravenous injection of five c.c. of solution, containing seven and one-half grains of the dihydrochloride. By whatever route given, quinine is a remarkably irritant drug. But if quinine by the needle, in either the muscle or the vein, were systemically available, then the needle for evident reasons were the method of choice. But solutions of this strength thrown under the skin will invariably cause a slough; thrown into the muscle, they wall themselves in; thrown into a vein, they cause a thrombus at least. You could not inject the same vein again tomorrow: it is obliterated by its use to-day. You might make use of it again in a week, the thrombus perhaps liquefying in that time, your patient living or dead. But there could be no systemic effect of the quinine until it went freely into the blood current. This it could not do so long as it was enthralled in the thrombus. To be of service, the intravenous route must have for its use a solution much weaker and therefore more acceptable to our liquid flesh than I have had opportunity to use.

Out of my own experience, therefore, I am persuaded (but every man sees his gods with his own eyes) that the best of all routes for the administration of quinine is by the mouth. I give five grains every two hours, or ten grains every four hours in one twelve hours out of each twenty-four—that is, forty grains a day,—until the fever is gone and the temperature is subnormal for a day or two. For certainty of effect, I prefer to give it in solution. I give the sulphate with one-third minim of hydrochloric acid to the grain dissolved in dram doses of Elixir of Lactated Pepsin. I usually flavor the solution with Fluid Lavender Compound, and I would add to this a modicum of deodorized tincture of opium but for the peskiness of narcotic restrictions. Opium would add, not only to the tolerance of the mixture and the comfort of the patient, but also the efficacy of the quinine.

TRANSUTERINE PNEUMOPERITONEUM.*

By JOSEPH J. MUNDELL, M. D., Washington, D. C.

To Dr. I. C. Rubin, of the staff of Mr. Sinai Hospital, of New York, the profession is indebted for a contribution to medical progress of real value. Dr. Rubin, interested in sterility in the female, had been working for the past few years with the view of demonstrating the patency of the fallopian tubes, first by injecting opaque solution, such as collargol, thorium and bromide into the uterus and tubes and then taking roentgenograms. He states that definite occlusion of the tubes could usually be demonstrated by these methods, but that patency could not always be verified. Then, too, there were other features which precluded its popularity. When two or three years ago the introduction of oxygen into the peritoneal cavity for diagnostic purposes was brought out, it occurred to Rubin that here was the means for the development of his idea.

Immediately then he began his work, in-

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sufflating oxygen into the peritoneal cavity through the uterus and tubes. As it later developed oxygen was found to be slightly irritating and slowly absorbed, carbon dioxide has lately been used in its stead, as it disappears entirely within thirty minutes and is not thought to be in the least irritating to the peritoneum. The apparatus is not complicated and the technique is simple after performing it a couple of times. The apparatus comprises a tank of CO_2 with a reducing guage, a specially made volumometer, a manometer, either a tycos or mercury, a metal cannula of the Keyes-Ultzman type, attached to which is a rubber urethral tip, and rubber tubing. The volumometer is a water bottle to which three bent glass tubes are attached, one of which dips down below the water level and to which is attached rubber tubing from the gas tank; rubber tubing is attached to the other glass tubes, one being attached to the manometer and the other to the cannula.

With the patient in the lithotomy position, any cervical mucus is removed by means of a suction syringe and the cervix and vagina painted with iodine. A single toothed tenaculum forcep is placed horizontally on the anterior surface of the anterior lip of the cervix and the cannula introduced. If done carefully and gently, these manipulations need cause very little or no pain. The cannula being attached to the rubber tubing going to the volumometer, the gas is now turned on in such a manner that the flow will be gentle, the rate having been calculated to be from 150 to 250 c.c. per minute. Rubin states that the average amount of gas required is from 75 to 250 c.c., depending upon the size and build of the individual. My experience is that even a great deal more than that makes no difference, though a large quantity is not needed.

The manometer readings are important. In patent tubes the pressure will at first register from 60 to a little over 100 mm., due to the resistance of the uterus, after which it will drop suddenly 20 to 50 points, as the gas passes through the tube. In occluded tubes the pressure reading will continually rise until 200 mm. is reached, when the gas is cut off, for above this is said to be danger. Immediately after the introduction of the gas, the patient should be fluoroscoped in an almost upright position, when, in the successful cases, gas will be very plainly seen on the right side between the liver and the diaphragm. If desired, roentgenograms may also be taken preferably on a Potter-Bucky frame. All this should be done, however, within fifteen minutes, for within thirty minutes all the gas may have disappeared.

After acquiring the technique, the procedure is attended with very little pain and discomfort for the patient. When the gas passes into the peritoneal cavity, there is a characteristic sharp pain, not severe, felt under the right shoulder blade and, if much gas is introduced, some pain and fullness are complained of over the whole upper abdomen. All discomfort disappears, however, in twenty or thirty minutes, and the patient is perfectly comfortable and in one hour's time is permitted to resume her usual activities. Introduction of gas into occluded tubes may cause considerable discomfort. One might conjure up in the mind grave dangers attendant upon such a procedure, but in practice such is not found to be the case, for in close on to one thousand cases reported by Rubin, Peterson, Ward and others, no serious morbidity has been noted. It is possible, if one is not careful in the selection of cases, damage might be done; for instance, a patient with a history of a recent pelvic infection may still have an acutely inflamed tube which may be slightly occluded with mucus or pus containing gonococci. Forcing such material into the peritoneum would naturally be accompanied by dire consequences. It goes without saying that discretion must be exercised in the selection of cases.

This procedure will be found applicable and valuable in no small number of cases, for many women present themselves during the course of a year to take up the problem of sterility. One would not for a moment take up the consideration of sterility in the female without first determining the status of the husband's genito-urinary system. Certainly it should be a source of great satisfaction to know that we have at hand a method so simple and devoid of danger whereby we may determine that there is no mechanical impediment to fertilization in the female. Having at hand such an aid, it should be made use of in a large number of women presenting themselves on account of sterility. It might be said that one unsuccessful attempt to introduce the gas into the peritoneum should be checked up by at least a second attempt before rendering an opinion that the tubes are non-patent. Many of you have no doubt performed a dilatation

and curettage for the relief of sterility and numerous operations on the cervix have been devised for the same purpose, but the futility of such methods can be readily seen if the tubes are occluded. Heretofore, the only way of determining occlusion, when it was suspected, was by an exploratory laparotomy, and it is needless to point out the advantages this method holds over a major operation. It is not at all uncommon, as anyone doing any amount of gynecological work will testify, while operating for some other condition, to find occluded fallopian tubes, when they were not suspected. A case reported by Rubin in one of his publications aptly presents the value of the method.

"A woman married three years and sterile. Upon pelvic examination she was advised to be operated and a dilatation of the cervix, curettage and stem pessary insertion were subsequently performed. Four days following this operation I was requested to test the patency of her fallopian tubes. The method employed by me resulted in failure to establish pneumoperitoneum. Laparotomy the same day revealed the fact that both tubes were closed at the fimbriated end. They were only slightly distended, their walls were flaccid and they were surrounded by soft cobweb adhesions—in other words, an old standing hydrosalpinix. The operation on the cervix in this case was certainly fruitless and could have been avoided by a preliminary examination with oxygen."

After having tried out this procedure on several cases, I am convinced that Rubin has developed a diagnostic aid that is of inestimable value and one that would seem to be comparatively devoid of danger when used with discretion.

1616 *Rhode Island Avenue, Northwest.*

DIGITALIS IN THE TREATMENT OF CARDIAC DECOMPENSATION.*

By L. E. STUBBS, M. D., Elizabeth Buxton Hospital, Newport News, Va.

Thinking over a subject to present to you it seemed advisable to consider one of practical importance, and one about which there is more or less general agreement, rather than to discuss something of theoretic interest only. As for its practicability, I know of no more practical subject than the one chosen.

All are agreed that digitalis is very important in the treatment of cardiac decompensation. Yet one finds varying opinions as to dosage, indications for its use, and the efficacy of the drug. It is with the idea of clearing up, if possible, some of these differences of opinion that this paper is written.

It is of interest to consider some of the earlier observations on the action of the drug. Withering, who first introduced digitalis into therapeutics as a remedy for dropsy, observed that "it has a power over the motion of the heart to a degree yet unobserved in any other medicine and that this power may be converted to salutary ends." But he did not connect this cardiac action with the relief of dropsy. Ferriar was the first to show this relation and pointed out that "the power of reducing the pulse is the true characteristic" while "its diuretic power is a less constant and less essential quality of the plant." Beddoes and Kinglake pointed out that, while the pulse is slowed, it is also strengthened, Beddoes maintaining that "in a certain dose digitalis will increase the activity of the arterial system." Its action on the heart aside from its inhibitory slowing, was first demonstrated by Schmiedeberg on the frog's heart.

Since the time of Withering and Schmiedeberg, many erroneous beliefs have prevailed with reference to its action. Fortunately, clinical studies with modern graphic methods have proven conclusively the incorrectness of many of these beliefs and have given us more precise knowledge of this most important drug. From the work of such men as Eggleston and Hatcher, of New York, Christian, Pratt and White, of Boston, and Cushny, of England, we have more or less accurate knowledge of its action on the diseased hearts of human beings as well as upon the hearts of animals.

In the use of any drug it is necessary that we first know its action so that we may correctly estimate the results obtained. It would seem appropriate at this point to refresh your memories as to the modern conception of its action. Since most of the therapeutic effects are attributable to its capacity to slow the heart rate, especially in auricular fibrillation, we may first consider this action. Whether or not the rate will be slowed depends upon pre-existing conditions largely, and especially upon the rhythm of the heart. If the normal rhythm be present, any great degree of slowing is unusual except in cases with edema or in those with a rapidly acting, hypodynamic heart in which the rate of the whole

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heart may be slowed by vagal action, inhibiting the rate of impulse formation in the sinus. Likewise, the rapidly acting hearts of acute infections will be little, if at all, slowed, though there are other indications of its beneficial action on the failing hearts of these aside from the slowing.

Therapeutic doses stimulate the vagus center and commonly induce some delay in conduction time through the auriculo-ventricular bundle. This may, and often does, amount to partial heart block and very occasionally complete heart block, which phenomenon may be abolished with sufficient doses of atropine, this paralyzing the vagal terminations in the heart. There are, however, exceptions to this which will be mentioned later. The slowing in auricular fibrillation is due to a depression of conductivity which prevents a large number of impulses from reaching the ventricles but the auricular rate is not influenced. This action is due in part to unknown muscular action, distal to the vagal terminations, which is not influenced by atropine, and in part to central action in the vagal centers. This slowing permits an increased volume of blood to enter the ventricles during the prolonged diastole, improves coronary circulation, and affords the heart muscle better nutrition.

Pharmacologic experiments and clinical observations have shown that digitalis may increase both the force and magnitude of ventricular contractions through direct action on the heart muscle. Acting in the above mentioned way, the failing heart is more or less completely restored with relief from the various concomitant symptoms.

In addition to its action on the vagal centers and cardiac muscle, digitalis may also act on the arterial walls and upon the centers constricting the vessel walls, thus elevating blood pressure. But it is important to remember that there is no clinical evidence that either of these actions takes place as result of any dose which can be given with any degree of safety. Clinically, we may expect the following: when there is heart failure and abnormally low blood pressure, the latter tends to rise as compensation is restored; where there is cardiac failure and high blood pressure, the latter usually drops with restoration of compensation.

Having considered the action of digitalis on the cardio-vascular system, the next subject to be considered is the indications for its use and the contraindications. The indications may well be summed up as follows: cardiac decompensation from whatever source indicates the use of digitalis. There are, however, certain reservations which may well be made and certain cautions may be urged. Unhappily, not all forms of cardiac decompensation are relieved by digitalis but this is due more to the advanced degree of disease of the myocardium than to any inherent shortcomings in the drug. Cardiac decompensation in the young and that resulting from rheumatic disease of the heart are more amenable to treatment than that resulting from arteriosclerosis in later life and from syphilis. In auricular fibrillation especially is it efficacious. Auricular flutter is likewise very strikingly benefited. Pulsus alternans may or may not be amenable to its action, also the rapid regular decompensated heart may be resistant. But in both of these conditions the myocardial damage is so extreme that there is but little likelihood of improvement from any form of therapy. Here also the margin of safety is so narrow as to necessitate great care in the use of digitalis, for serious toxic effects may be very readily induced. We can but try, however, with the above precautions in mind. In decompensated hearts with numerous extrasystoles, great care must be used also in the administration of digitalis, since the number of extrasystoles may be increased. Lastly, paroxysmal tachycardia is but rarely benefited by its use.

Angina pectoris, hypertension, and aortic insufficiency with decompensating hearts, have long been held to contraindicate the use of digitalis. Modern work has shown that these will no longer stand as such. Angina pectoris rather than being a contraindication where decompensation exists is really an indication, for often when compensation has been restored, the attacks may occur much less frequently and may be much less severe while compensation is maintained. So with hypertension, as this is often a compensatory mechanism by which the failing heart maintains the circulation. Rather than seek to lower blood pressure by various vaso-dilators, we should exert our energies more to relieving the embarrassed heart by restoring compensation and, when this has been accomplished the high blood pressure will most often be seen to lower, the need for same no longer existing. Aortic insufficiency has been supposed to be a contraindication be-

cause the action of the heart is slowed and the regurgitation of the blood has been supposed to be increased, as well as because of the fact that the blood pressure has been supposed to be increased. But neither of these actions happens in man with therapeutic doses, that is in the case of pure aortic insufficiency. So we see that there are really no contraindications, though with certain types of cases caution and close observation are necessary.

Signs of digitalis intoxication should be looked for and, when they occur, the drug should be stopped for the time being. Such signs as nausea, vomiting, marked grade of sinus arhythmia, especially when independent of respiration, partial or complete heart block, premature contractions, coupled rhythm due to the occurrence of premature contractions after each regular beat, should be noted and combinations of any two or more of the above call for care, and probably discontinuance of the drug.

Having decided to give digitalis, but two additional factors need to be considered; what form of the drug will we use, in what dosage and by what route. As for the first, it really matters but little what form is chosen so long as you know that the drug you are using is potent. Various digitalis preparations are interchangeable in ratio of their potency. Digitalis from various sources varies widely in its potency. If possible, have a reliable druggist keep in stock for you a good digitalis leaf in powdered form, the efficiency of which you have tested from clinical experience. Insist that your patients have their prescriptions filled by this druggist who will dispense the drug either in pill form made from powdered leaf, freshly made infusions, or tincture; the only draw back to the latter is the time consumed in its preparation.

How you will administer the drug depends largely upon the urgency of the symptoms with which you have to cope. Any form given by mouth will require about twenty-four hours for action, except as below mentioned. When conditions are urgent, it is well to have a suitable preparation for intravenous use, by which means an effect will be produced in a few hours, often within one hour. Subcutaneous use is less satisfactory, since the effect is less certain, and less rapid. Furthermore, any of the forms which are potent are apt also to be very irritating when given in this way. Where quick action is demanded or the patient is vomiting, intravenous use is probably the best, and for this purpose strophanthin is to be preferred with, of course, due precautions in a patient who has recently been taking digitalis. Liquid digipuratum for subcutaneous use is very satisfactory. It is better always to limit yourself to a few potent forms and to become proficient in their use than to use many forms, simplicity and potency being the all important factors.

Lastly, what dose will we use? The best therapeutic effects are obtained, only when enough of the drug has been given to produce one or more of the symptoms of minor intoxication. In the absence of satisfactory therapeutic response, no one can say that digitalis has been given a fair trial until such symptoms have been produced. There are three general plans for oral administration: small dose method in which four to six days are required for full digitalization; two to four grains of the powdered leaf or twenty to forty minims of the tincture are given four times daily, until results are obtained; the large dose method which requires usually one to two days for results to be secured. During the first twenty-four hours, six to seven grains of the powdered leaf, or one drachm of the tincture, are given every six hours for the first four doses; the second day, three grains of the powdered leaf, or thirty minims of tincture, are given and continued four times daily until full digitalization is obtained. The third method, the body weight method, is not at all practical except in hospital practice. It is not devoid of danger, and close, accurate observation is needed, such as can be made only in the hospital. For purposes of this paper, this method may well be omitted, but for sake of completeness it is given for what it is worth. Under ideal conditions in a hospital, it is very useful and I have seen it used and used it myself with excellent results and thus far without evil consequences. It has one great advantage in that full digitalization may be secured in twenty-four hours and incomplete digitalization of a valuable degree within six hours. From this it can be readily seen that in urgent cases it is very useful. The method depends upon the establishment of an average total amount of digitalis necessary to produce full digitalization. The total amount is expressed in terms of activity of the drug and the patients's body weight in pounds. The activity

of the drug is determined by the cat method of Hatcher, the unit being the weight of the dry drug in milligrams which is necessary to kill one kilogram of cat when injected slowly and continuously intravenously. This amount is the cat unit. The average total amount required for oral administration to man is 0.15 of one cat unit per pound of body weight. Knowing the activity of the drug and the patient's weight, the total amount of the drug necessary may be calculated very easily.

To allow for variation in the absorbability of the drug and for variation in the patient's ability to absorb same, give one-half of the total amount at the first dose; one-fourth six hours later; thereafter one-tenth at six hour intervals, until full digitalization results. Where there is edema, it is best to deduct twenty-five per cent. from the total amount estimated as being necessary according to the patient's weight and use seventy-five per cent. of the total.

At times it may be necessary to administer the drug over long intervals of time to maintain compensation. Here always give by mouth and the patient soon learns by experience the amount necessary for him to use. Usually, one and a half to three grains of the powdered leaf, or fifteen to thirty minims of the tincture, will be sufficient for the twenty-four hours. Since the action of the drug is continuous, this amount is best given in one dose rather than in broken doses.

Finally, I might add that our failures with the use of digitalis are often attributable to our method of giving or to our ignoring the very important part of its use, that is its potency. We cannot expect results from any inert drug. Given an active drug, and given in proper doses, I don't know of any drug upon which we can depend with more certainty than digitalis.

THE TREND OF THE HEALING ART.*

By ALFRED B. GREINER, M. D., Rural Retreat, Va.

The early history of the art of healing is altogether legendary, but there is very good reason to believe that the country of Egypt is the place where the art was first cultivated with any degree of success, and likely the office of the priest was combined with that of the physician.

We find in the writings of Moses allusions to the practice of the healing art among the Jews, especially in its application to the treatment of leprosy. These priest physicians were the first to conceive the idea that cleanliness and the control of contagion by proper isolation were necessary in the practice of preventive medicine. This particular branch of the healing art, and by long odds the most important of all its subdivisions, is nothing new, as we have been inclined to believe, is not modern, but is simply staging a return after having suffered some neglect for a few centuries.

The name of Aesculapius appears prominently connected with old-time medicine, and according to one story, he became so proficient in its practice that he acquired the power of restoring the dead to life. It is interesting to note that because of this power Pluto became offended, fearing that his kingdom would not be sufficiently populated, and complained to Jove of the innovation, and thereupon Jove slew Aesculapius with a flash of lightning. If restoring the dead to life can properly be construed as the practice of the healing art, this was the first act, so far as we know, of any attempt being made to restrict the practice.

It is extremely unfortunate that the term medicine is not always used in its most comprehensive sense, embracing as it does every device known to the healing art. We find, however, that there are modern jurists, and legislators especially, who do not accept this definition of the practice of medicine, and who spurn all efforts to establish such a fact. Fact it is, nevertheless, that under the one term medicine is included all devices which have any property within them of mitigating or curing disease, and it is equally clear that all who make use of these devices are practicing medicine.

There was a period in modern times given over to expansion and improvement, a developmental period out of which grew the necessity of specialization which has been so great a boon to humanity. Society entered into the situation, and the public demand for the service of specialists stimulated those seeking a golden opportunity for attaining prominence and distinction in the application of some well defined branch of the healng art. Here is where the trouble began, because the successes attending the efforts of the specialists tended to arouse the ire and envy of cults

*Address of president before the Southwestern Virginia Medical Society, in Pulaski, May 11 and 12, 1922.

which have ever since sought by legislative enactment to abridge the term medicine, and confine the efforts of all physicians to the narrow channel of treating all diseased conditions solely by the use of drugs; and in their effort to further subdivide the branches of the healing art they have endeavored to create a loophole through which they may crawl in their efforts to secure permission to practice their trade, the excuse being that they do not make use of drugs.

It is useless to select one of the procedures of the healing art and attempt to attach to it such importance that it immediately becomes a science within itself.

As a profession practicing the healing art we have been too content to delve into scientific problems, vying with one another in being able to proclaim priority in the discovery of some new application of the art, and have too long allowed our relations to the public and the state to drift wherever ill advised public opinion created a current. The situation as I view it is not critical, but it may become so.

State medicine, whatever may be its scope, looms on the horizon of the healing art, and, while no brief should be held against any agency designed for the improvement of health conditions, yet it is to be deplored that there is not more co-operation with the practicing physician and more co-ordination of effort. Some sort of union of effort would relieve the chaos, but this is largely a legislative matter and the solution is not in sight. Various health agencies have created many salaried positions: the school nurse, the itinerant specialist to examine school children and conduct surgical clinics, and the clinician to diagnose the diseased condition of any who may apply.

Legislatures at every session have to contend with numerous bills for the creation of new health activities and increased appropriations and there have been strenuous efforts to regulate and restrict the legitimate practice of medicine. Many of these efforts have been the aims of the osteopaths and the chiropractors.

Recently I noticed the statement that seven years ago there were introduced into the forty-two state legislatures then in session over one thousand bills on public health alone, an average of over twenty-three bills. Some of these bills were endorsed by medical societies, and others were the creation of legislative acumen and charlatan insistence. There seems to be an unorganized effort to legislate health into the individual, and in many instances the indivdual shows an inclination to resist legislation and interference with what he terms his personal liberty. There are various distorted views of what constitutes personal liberty, but, when there appears the effort to legislate medicine and morals into the American public, the various opinions show an united front of resistance. There seems to be no fixed policy in the legislative effort: there are objectives but there is no accord among the seekers of them, and the agencies interested in health matters are consequently conducting a sort of futile health campaign. In brief, there is too much divided effort.

Some states are adopting health measures that have been discarded by others. Some states are recognizing the drugless healers and placing them on a level with the physician, while other states require of them a professional education. There seems to be no common ground on which all interested can stand.

Education and not legislation of the public has been the hue and cry for some years; there has not been an overdose of education but there is a woeful lack of interest in health matters, and the confusion existing among those who practice the healing art is largely the inspiration for this lack of interest.

Recent statistics compiled by the Council on Medical Education and tabulated in the *A. M. A. Journal* of April 29, 1922, show that the house of those practicing the art of healing is not yet clean and the floor is yet littered with the illiterate.

Much house cleaning needs to be done before the legislative atmosphere can clear and not until a union of all health forces can be effected will there be attained idealism in the healing art. But there can be no union until there is co-operation, and at present we are far from idealism.

THE MANAGEMENT OF NORMAL LABOR AND THE PUERPERIUM.

By A. M. SHOWALTER, M. D., Cambria, Va.

Preliminary Remarks.

From the earliest beginning of mankind, when following the creation of man, in the Garden of Eden woman was brought into

*Read before the Southwestern Virginia Medical Society at Pulaski, May 11 and 12, 1922.

being by a surgical process, down to the present time, the subject of obstetrics, or the proper handling of the mother and infant during childbirth has always attracted a great deal of attention and has been a subject around which many luminaries of the medical profession have at times written volumes upon volumes of valuable literature, and still the fact remains there are differences of opinion among us yet just what is best to do under specified circumstances. For the most part, we are agreed upon the more important or fundamental questions relating to the saving of the child's life and the mother's protection, yet the important fact remains that there are deaths among infants and among maternity cases too often still, to warrant our arriving at the conclusion that all has been said and done that can be, in order to obtain the best results.

I do not know of any phase of the practice of medicine in which there is as much diversity of opinion, when it comes to the individual handling or treatment of a patient, as there is in respect to a normal labor case. This is perhaps due to the fact that we seldom find it necessary to call upon other physicians to assist us in our work unless it be in complicated cases, and this at once takes us away from the particular phase of the subject, which I have selected for discussion—THE MANAGEMENT OF NORMAL LABOR AND THE PUERPERIUM. We therefore work out our own salvation, so to speak, in our individual technique, using certain general principles upon which to formulate our management of labor cases and, so long as things go well, we are not inclined to make any change. If they fail to go well, then we may change our technique, but unfortunately the patient generally becomes an unfortunate victim of our mistakes and we, learning by experience, are left a legacy of information for the treatment of future cases.

In this connection I wish to state that I shall refer to normal labor such cases as do not require any radical or surgical means of delivery, such as version, forceps, Caesarean section, etc., but the cases that are delivered within a reasonable length of time, without any artificial assistance except at certain stages of the second stage of labor. I will for convenience divide this subject into four parts under the following headings: diagnosis; treatment during labor; treatment of infant (briefly); outline treatment of mother during puerperium.

(1.) DIAGNOSIS.—The question of determining what you have when you are called to see a labor case is necessarily of paramount importance, and is in this instance of no less importance than it is in surgery or medical diseases. To distinguish between a normal and an abnormal labor case is absolutely necessary in order to know how to treat a normal labor case as well as an abnormal one. This is by no means an easy matter and, like diagnosis in other conditions, is perhaps the most difficult thing in the practice of obstetrics; yet, upon a successful determination of the conditions present, rests very often the responsibility of one or more lives. In other words, when you know it is safe to sit down and wait, do so, but not unless you do know it, for proper intervention in abnormal cases is just as important as no intervention in normal cases. A careful examination of the abdomen will generally easily reveal the position of the child except in such cases as occipito-posterior positions, R. O. A. which makes little difference, and in case of twin pregnancy (which is not always an easy thing to determine), and placenta previa. Having made the necessary examinations externally and internally to determine the fact that we have a normal condition to deal with, we then pass to the next step in our treatment, namely treatment during labor.

(2.) TREATMENT DURING LABOR.—It is during this stage of the case that we find most of our differences of technique as to how to treat the case and just what to do, as far as my observations are concerned. One physician will not give chloroform at all, and another gives it to all cases indiscriminately. One will use deep anaesthesia and another very light, while still another will follow the "Twilight Sleep" idea and wait for results. One will use stimulants, such as ergot and pituitrin, and another will say "let nature take its course," and so we find "just so many men, just so many minds," as far as the treatment of the case is concerned. In giving you my views on this subject, I do not expect that it will meet with your entire approval, for it would be rather an unusual thing for a physician to read any paper that every one would agree on, and, if he did, it would, needless to say, be rather uninteresting.

The first and most important thing to do in

all cases of labor, as far as treatment is concerned, applies to the self-applied treatment on the part of the physician, namely, a thorough scrubbing of the hands and washing in alcohol or bichloride of mercury, or some good antiseptic, and the use of rubber gloves, if you may prefer them. I seldom use rubber gloves unless it be for my own protection, or in the event I have some very virulent infection with which I have likely contaminated my hands. The next thing is the careful bathing of the external genitals of the patient by the nurse, and it is very important to have a nurse that knows what this means, as I find a good many of the so-called nurses with whom we have to deal in labor cases in the country have little idea of what a careful bathing with an antiseptic solution means. While shaving a patient is probably technically the best thing to do, like wearing rubber gloves, I do not think it is always practical and hence cannot yet be considered as proper regular routine, until the ideas of our patients have changed a great deal from what they are now. In this connection I wish also to say that I do not believe in the use of vaginal preparations such as douches, unless you are dealing with an acute vaginitis from some infection. In this event, I am rather inclined to prefer a douche of 1:2000 bichloride of mercury, or lysol, one dram to the quart. I do think an S. S. enema should always be given to cleanse the lower bowels in order to prevent fecal contamination at time of delivery.

After having made a careful examination and having determined the position of the child, the next thing to determine is the nature and character of the pains, how far apart, how long they last, and how forceful while they last. The nature and consistency of the cervix, whether soft and pliable, or thick and rigid, and the amount of bulging of water produced by the contraction of the uterus during pain. When these facts are all determined, you are in a position to know best what to do,—whether to wait and do nothing, or whether to use some remedies to assist in the delivery of the child. In the first place, a careful examination of the mother's heart should be made that we may know whether it would be safe to use chloroform. If there is no contra-indication to the use of chloroform, I believe in most instances that its proper use is a distinct advantage to the parent and child, also. Furthermore, I believe that in a vast majority of cases the timely use of uterine stimulants, such as pituitrin and ergot, controlled in their action by chloroform, is a distinct advantage to both mother and child, and it is right here, in my opinion, where the great criticism has come, especially of pituitrin. It has not only been used when it was not at all needed, but it has been used in too large doses, and, above all, the physician has lost sight of the fact that no drug of this kind should be used without a control to prevent the too speedy delivery and lacerations that often follow, or the rupture of the uterus, as has been frequently the case. There will be no ruptured uteri or lacerated perineums, in my opinion, I don't care how hard your contractions are, whether natural or induced, any more than the incompatibility of the size of the child and adjacent perineum will permit of, if sufficient general anesthetic will be administered to control those contractions, so that they will not be too forceful. Of late I notice a great deal of criticism about the use of pituitrin. I wish to state that in my opinion, it is one of the most valuable drugs that has been brought to our attention in recent years but, like all means of so much potency, it should equally as well be carefully safe-guarded. I believe that by its use a majority of the labor cases can be painlessly delivered,—that is, by using chloroform to induce rest and the other to induce contractions. In other words, a patient having normal pains, put under chloroform, will generally slack up the contractions of the uterus until labor, so to speak, rests entirely, or is so slow that the mother is completely worn out and the child is often born dead from the prolonged pressure on the head. But suppose you use one-half c.c. pituitrin and then put your patient into a state of unconsciousness, labor progresses as rapidly if not more so than it did before and the child is born while the mother is entirely unconscious of anything that is going on. In other words, the chloroform puts the sensory nervous system to sleep as well as the voluntary muscles of the body, before it puts to sleep the involuntary muscles, and so you get an unconscious active contraction. Furthermore, I believe the use of forceps can often be obviated by the use of stimulants, and with less damage.

I believe that the great majority of labor cases do need some stimulation to get the best

results, for what reason I am unable to say. A small percentage of apparently normal cases are too slow to expect good results either to mother or child. Then, when the head presents at the perineum, if the muscles are tight and likely to tear, you push your patient to the point of deeper sleep and hold as long as you wish before delivering the head of the child. In other words, to make my point clear, I believe that when labor is once started, the shorter the period of delivery, the better off both mother and child are, provided you do not push this to the point of rupture of the uterus and unnecessary tears of the vagina and perinuem. By the combination of the use of stimulants and depressants, you can get an unconscious delivery, as a rule, that has a more beneficent effect than the "do nothing" policy, particularly as to prevention of nerve shock to mother, and damage to the child's head.

Earlier in the practice of medicine I followed a very conservative policy and chose to let nature take its course in all normal or questionable cases, but my own experience has taught me that was a great mistake. I find that a quick delivery, properly handled, leaves a mother and infant both in better condition than a slow method. With reference to the use of pituitrin, I believe the great mistake has been made in giving the improper dosage, for I notice further that some patients are very sensitive to the drug and others are very tolerant of it. I do believe that in this instance, as all others, it is best to be on the safe side and give small doses to start with, unless you are sure what dose will be indicated, and I do not know of any means whereby this can be found out. My rule is to give one-half c.c. pituitrin in all cases that seem to need a stimulant, but even this is entirely too large a dose for some patients. I never give it, however, unless I have chloroform and a suitable case to give it in to stop the contractions, provided they get too strong. In the event this does not get results, which is often the case, I use larger doses and, in those cases where the reaction is very sluggish, and the contractions are steady but very light, I have used as much as two c.c. at a single injection with very gratifying results. Start your dosage low and increase it if necessary to the point that you can get good, strong, and semi-conscious contractions of the uterus, under chloroform, and I believe you have obtained your best results.

In the event pituitrin does not work, and in some cases it does not stimulate, I find that ergotole will frequently do the work when pituitrin will not, two c.c. hypodermically, or four c.c. by mouth. Very often too the cervix tends to follow the head of the child and delivery can be materially assisted by holding back the anterior or posterior lip of the cervix as the head descends during a contraction, and this is so frequently the case that I feel as though it should be mentioned among details of the handling of normal labor. Particularly when the head impinges on the perineal muscles and the pains reach a sudden degree of virulence, I believe the anaesthetic should be pushed rapidly and the head held back by hand, if necessary, until delivery can be effected easily and between contractions, if possible. I believe also that an artificial rupture of the waters should be made in most instances as it frequently tends to retard labor, after its purpose of dilating the cervix has been accomplished.

As soon as delivery is completed, the cord is tied in two places about one inch apart and about three inches from umbilicus and cut between the ligatures. The fundus of the uterus should be gently massaged or rather carefully watched to see that it contracts well, a period of ten to fifteen minutes being the usual time necessary for an easy expression of the placenta. A careful watch should be made of the uterine contractions to detect any possibility of undue hemorrhage for at least one hour after delivery and, if there is no trouble in this time, as a rule I feel safe in leaving the case. If the placenta does not express itself automatically within a reasonable time, slight pressure on the fundus of the uterus together with gentle traction on the cord will generally easily deliver it.

A careful examination is then made of the perineum to see if there are any lacerations and if so they should be immediately replaced and sutured, getting the best approximation possible. I do not make it a rule to search for tears of the cervix, and am perfectly frank to say that I find it rather working in the dark to try and find or repair one at time of delivery, though others of you may think this is an easy matter. Any trouble with the cervix will show up sooner or later and I doubt if any real danger is done in waiting. At any rate I do not believe it is practical to

either diagnose, treat or prognose a cervical tear at time of delivery.

(3) Care of Infant.—The child is thoroughly rubbed with oil, cord dressed with sterile gauze and dusting powder, and laid away to be bathed and dressed eight hours later. At least this is my advice which is occasionally taken. For the most part, I find that the majority of people in this section seem to think this a very improper thing to do and, unless you have your patients in the hospital where you can look after this yourself, they generally bathe the infant as soon as you turn your back, which I really believe is a bad custom. The baby is then given warm water at intervals during the day and put to the breast at intervals of every two or three hours during the day and twice to three times during the night, starting from two to four hours after delivery. No further routine treatment is ordered for the baby, except the usual daily bath and dressing of the cord when it comes away, or beforehand when necessary.

(4) After Care of Mother.—After delivery, the external genitals are thoroughly bathed off with antiseptic solution and a sterile gauze pad applied. An external genital bath of one dram lysol to one quart of boiled water is then ordered to be used carefully twice a day, followed by sterile absorbent pads of cotton and gauze to be changed as needed. Patient is advised to stay in bed at least ten days, and longer if need be, and to consider herself an invalid, partiallly, for the next month after getting up. I always advise a person to get up in the upright position, when the kidneys and bowels act, just as soon as they feel able to do so after delivery, as I believe this encourages vaginal drainage and promotes good results. I also advise patient to be propped up in bed after the third day for meal time, as I do not believe this amount of exercise hurts anyone and at the same time does relieve the monotony of lying flat in bed all the ten-day period. Purgatives are advised to be used when necessary, castor oil being the one of choice. In reference to diet, I feed my patients very liberally, soft diet for the first three or four days and after that general diet, as I do not believe the food is as apt to hurt the patient as the baby, and, if no unfavorable report is heard from the baby, the patient continues on a full diet. If the baby is colicked and not digesting his food, then it may be necessary to restrict the mother's diet in order to prevent the digestive disturbances with the child. If the patient is in the hospital, I see her just as I would any other patient in the hospital; one or two visits if close by, during the first three or four days after delivery, and, if some distance out in the country, I leave it to the nurse in charge to call if anything goes wrong, which I find is seldom necessary. I used always to pay at least one visit to a patient after delivery, but so often finding these visits unnecessary, I have some time ago ceased to do this where the patient lives any distance out from office.

In conclusion, the few points I wish to emphasize may be summarized as follows: 1. thorough antisepsis by careful bathing of hands and genitals; 2, careful and thorough examination of patient to see that position of child is normal and size and shape of pelvis is normal; 3, see that labor progresses regularly and that child does not lay too long in pelvic outlet, using such means as may be necessary to bring about a reasonably speedy delivery; 4, carefully examine placenta to see that it is complete and intact, and repair all lacerations to external genitals; 5, do not leave patient until you are satisfied that uterus is contracting firmly and regularly enough to make it safe to do so, which is generally about an hour after delivery; 6, impress upon the patient as well as the nurse in charge the importance of regular and proper bathing after delivery, for a period of at least ten days, this being of all the postpartum treatment the most important; 7, give no medical treatment to mother or baby except such as may be indicated for laxatives or pain relieving agents. No regular routine medical treatment is necessary.

PERICARDITIS WITH EFFUSION.

By WM. B. PORTER, M. D., Roanoke, Va.

During the past five years I have studied pericarditis with effusion with the purpose in view of determining the relative importance of various previously described physical phenomena. This study has been done largely on hospital patients where intimate association with the *x*-ray department has made my conclusions relatively sound in that I was able to make an antemortem study of the underlying pathology. One must admit that a

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Dr. Porter was connected with staff of Stuart Circle Hospital, Richmond, at time of reading of this paper, but has since moved to Roanoke.

study of this type has one outstanding fault, i. e. the influence of personal equation, yet I believe this is neutralized by the effort to establish certain clearcut cardinal facts instead of some single pet phenomenon.

It will not be my purpose to discuss the many various signs described as indicative of pericarditis with effusion. I am prompted to omit many because they have seemed to me to be of little or no real value. Such phenomena were described prior to the advent of accurate x-ray observations; hence, many cases of pericarditis with effusion presenting these phenomena were incorrectly diagnosed, or entirely overlooked. Also, signs which have received slight mention have proven themselves to be of cardinal importance.

No phenomena have enjoyed such an enviable heritage as the "obtuse cardio-hepatic angle" and the "disappearance of the friction" with the accumulation of an effusion. In the first instance an x-ray silhoutte of a pericardial effusion at once demonstrates the fact that the "cardio-hepatic angle" is not obtuse. On the other hand, it is in reality increasingly acute. But beyond this fact there is another of even greater clinical importance. Percussion of the right cardiac border offers many difficulties. In very large effusions the lung is displaced, consequently the right margin can be easily demarcated, but in relatively large effusions compensatory emphysema frequently obscures the percussion evidence of right-side extension. A study of a series of x-ray silhouettes of pericarditis with effusion furthermore demonstrates the fact that even in relatively large effusions the pericardial sac is not distended to any appreciable extent beyond the right sternal margin. In a study of the cases cited the right cardiac border has been of little value in determining the presence of effusions except in a few instances.

The presence or absence of pericardial friction has been even more uncertain. One case in this series well illustrates this point. While the patient was on the x-ray table an extensive friction sound was audible over the entire precordial area. A few minutes later, 1,350 c.c. of fluid were aspirated from the pericardial sac. A plate made shortly afterwards demonstrated that only a portion of the fluid had been removed. This is only one instance in many of a similar nature.

Much speculation might be introduced in an effort to explain this apparent inconsistency, yet it suffices to say that the most important factor in deciding the relation of the heart to the anterior pericardial sac wall is the relative size of the heart to that of the anteroposterior diameter of the chest cavity. It can readily be seen that if the heart fills the available space between the sternum and spine it will remain against the pericardial sac anteriorly. And again if the fiuid distends posteriorly, as it so frequently does, it tends to push the heart anteriorly against the chest wall.

I recommend that the presence of a pericardial friction rub should make one suspect fluid, its absence, on the other hand, has no cardinal value. Williamson, in 1920, reported his experimental studies on pericardial effusions, and in these studies contributed much to our knowledge of the primary distributions of effusions. He showed that the first distribution was along the lower margin of the heart, that is along that portion of the heart which lies in the angle formed by the diaphragm and anterior chest wall. As the amount increases, it extends around the right margin and over the apex, and a relatively small amount distends the pericardial sac around the great vessels at the base. As a clinical evidence of small effusions he attaches great importance to the downward displacement of the left lobe of the liver. This he believes is one of the earliest phenomena. It must be remembered that Williamson's work was done on cadavers, and, consequently, all diaphragmatic action and tone were absent. This might explain the frequency of such a finding in his studies, yet he emphasizes the same findings in clinical pericarditis with effusions. For me, the accurate location of the lower margin of the left liver lobe has been in the large majority of patients an impossible task. Abdominal distention and the taut abdominal muscles, especially the recti, have made the accurate determination so uncertain that in the larger percentage of cases this phenomenon has not been of any material assistance. One might discuss at length many other phenomena that have been described as indicative of pericarditis with effusion, yet I feel that it behooves us to consider seriously only those phenomena which through this observation and study have proved themselves cardinal. I come to what I believe to be the five most trustworthy physical findings elicited in proven cases of pericarditis with effusion:

1. A pericardial friction rub heard best while the patient is not breathing, and sometimes only audible at the end of forced expiration. I place this first, because it is usually the first sign to direct the attention to the pericardial sac. As I have previously stated it should at once cause suspicion of effusion and should never be used as evidence against an existing effusion.

2. Increase of the substernal dulness in the second and third interspaces, especially to the left. A study of a series of x-ray silhouettes at once gives us a palpable explanation of this phenomenon in the form of a widened mediastinal shadow. This phenomenon is best elicited in the recumbent posture with light percussion, using the "crooked" finger as the flexi-meter. This I believe is one of the earliest signs of an effusion.

3. Extension of the left area of cardiac dulness beyond the apex beat, with a relatively high area of left auricular dulness. It is a well-established principle that for practical purposes the left cardiac border corresponds to the maximal apex thrust. In pericardial effusions, the percussion of the left border of *dulness* is very much more clearcut than percussion of the left *cardiac* border. One rarely encounters much difficulty in demonstrating the dulness beyond the apex or the high dulness in the left auricular area. The latter finding is confusing if there exists a mitral stenosis, yet in the absence of this lesion it is a most helpful phenomenon.

4. Evidence of compression of the left lung posteriorly. This finding assumes one of two rather distinct types. First, distant bronchial breathing with impaired resonance, elicited at the angle of the left scapula. With an increasing amount of fluid in the pericardial sac these findings increase, involving the entire left lower lobe posteriorly, closely simulating a pneumonic consolidation. Secondly, the physical phenomena of consolidation plus those of a pleural effusion. It must be admitted that many cases of pericardial effusions have an associated pleural effusion of a moderate size, yet I believe this is the exception and not the rule. The evidences of a pleural effusion are strikingly similar at times, so that I am convinced that not infrequently one taps a pericardial sac posteriorly, believing at the time he is aspirating the pleural cavity. There is one differential point of cardinal importance. Whereas in pleural effusions the dulness rises high in the midaxillary zone, in large pericardial effusions the line of dulness reaches its maximum height at the angle of the scapula, descends downward in the midaxillary zone and then rises upward about the anterior axillary line, to become continuous with the left margin of pericardial dulness.

5. X-ray. I will not discuss this method of study because Dr. Hodges will do so in detail. It suffices to say that the x-ray silhouette is the last Court of Appeal and its judgment is almost infallible.

SARCOMA OF THE LONG BONES*

By JAS. W. GIBBON, M.D., Charlotte, N. C.

Malignant tumors of bone constitute one of the most important fields of a surgeon's work. "Their very frequent occurrence, local destructive tendencies resulting in loss of limbs, rapid extension with loss of life, and the difficulties in establishing the prognosis render them a complex surgical problem." (Ewing). Within recent years our knowledge regarding these lesions has very greatly increased, but even yet accurate correlation of clinical features, x-ray appearances, pathology and prognosis are lacking and further investigation is needed.

PATHOLOGY: There is no uniform classification of the primary sarcomatous tumors of bone and bone marrow, but that of Ewing seems to be most generally accepted, and perhaps the most simple and reasonable. These tumors are divided into four great groups: 1. Osteogenic sarcoma; 2. Giant cell sarcoma; 3. Myeloma; and 4. Endothelioma (Ewing). Of these, the most important, by far the most frequent, and the ones principally to be considered herein are the osteogenic sarcoma and the giant cell, or epulis type of sarcoma. The myeloma and endothelioma are very rare tumors, and may be dispensed with briefly.

1. OSTEOGENIC SARCOMATA, the largest and most common of these groups, spring originally from the fibroblasts, or ordinary connective tissue cells, which are normally the progenitor of bone forming tissues of the body. Whatever the anatomical variety, wherever the location, periosteal or central, osteogenic sarcomata are produced from these cells always. It is worthy of note that these fibroblasts, whose chief function then is the production of bone,

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are capable of every wide degrees of differentiation, and often give rise to tumors which retain more or less the function of bone production. When this differentiation is not marked, or absent, and these cells seem to retain none of their normal function but are devoted solely to rapid and exaggerated reproduction, the tumor produced is a soft succulent mass of pleomorphic cells of irregular form, and of high malignancy. The more complete differentiation of the spindle cells into fibrous tissue, myxomatous tissue, cartilaginous and osteoid tissue, results in the more firm, more slowly growing, and less malignant tumors. It is, therefore, this fundamental characteristic of differentiation of the fibroblasts or spindle cells which has given rise to the more complex histological distinctions between sarcomas, and is exemplified in the terms, spindle cell sarcoma, large round cell, and small round cell sarcoma, fibrosarcoma, myxosarcoma, chondrosarcoma, osteosarcoma, and combinations of these as osteo-chondro-sarcoma, etc., when as a matter of fact all are simply degrees of one and the same process of growth.

The three anatomical varieties of osteogenic sarcoma are (a.) the fibrocellular sarcomas because of the predominance of fibrocellular tissue, and is chiefly periosteal; (b.) the telangiectatic sarcomas, because of the overgrowth in blood vessels, and is largely central, and (c.) the sclerosing sarcoma, because of the exaggeration of bone production, and is periosteal or central. These distinctions are not always clear, and there may be combinations of them in the same tumor.

(a.) *Fibro-cellular or Periosteal Sarcoma.* This tumor arises from the inner layers of the periosteum, extends along and encloses the shaft of the bone. It has a sharply marked border, and causes a relatively bulky, rounded, fusiform or lobulated tumor, lying outside of the shaft, which long remains intact. Periosteal growths commonly reach a large size. While the integrity of the shaft is usual, the more cellular growths penetrate, erode and destroy the compact bone, and lead to spontaneous fractures. According to the consistence, these tumors are soft, cellular and highly malignant, or firm and fibrous, or irregularly ossified. For a short time there is encapsulation by the periosteum, which may lay down a thin bony capsule. When this is broken through, the tumor invades the muscles, fascia and other soft parts. A characteristic feature of periosteal sarcoma is the bony trabeculae which radiate from the shaft of the bone into the tumor. It does not cause expansion of the shaft as noted in the giant cell sarcoma. Though sometimes quite vascular, these tumors do not pulsate. Fatty and mucoid degenerations may take place, also there may be hemorrhage, necrosis, and cyst formation in the tumor mass.

(b.) *Telangiectatic Bone Sarcoma, Central Osteogenic Sarcoma, Bone Aneurysm, and Malignant Bone Cyst* are terms denoting the same lesion, osteogenic sarcoma arising in the medulla or marrow canal of the bone. There is considerable variation in the character of these central sarcomata, but they all develop from the fibroblast or spindle cell, and are rightly called Central Osteogenic Sarcoma. A peculiar feature of many of the central sarcomata, is their enormous vascularity and absence of any bulk of tumor tissue, and thus the difference in terminolgoy which usually describes the predominant appearance. Some are called Bone Aneurysm because of the very great vascularity of these tumors, which may pulsate and even yield a bruit; also Telangiectatic Sarcoma, because of the extensive development of the blood vessels, which may be widely dilated into large sinuses. Malignant Bone Cyst is the central sarcoma characterized by the complete absence of any bulk of tumor tissue. Also, as in the periosteal sarcoma, there may be more or less production of intercellular substance by the fibroblasts consisting of fibrous tissue, myxomatous tissue or osteoid tissue, and resulting in tumors of a more firm and solid nature. But this seems to be of rather infrequent occurrence, the central sarcomata being more often characterized by great vascularity and lack of real tumor tissue. These sarcomata very early destroy the shaft and infiltrate the soft parts, penetrating the marrow cavity for only a short distance. The absorption of the bone is rapid, and the line of absorption, though irregular, is very sharp. Spontaneous fracture often is the result. In some cases the periosteum is displaced outward, and succeeds in laying down a thin shell of bone. There is not any expansion of the bony shaft in these tumors. The majority of central tumors are not of this type, but are the giant cell type which is relatively benign and not osteogenic. The differential diagnosis between the two is often difficult.

(c.) *Sclerosing Osteogenic Sarcoma* is the type in which there is a production of much

dense, solid bone, sometimes forming the bulk of the tumor. A large portion of the end of a bone is converted into a solid mass of dense ivory like bone, obliterating the marrow cavity, and causing a fusiform swelling. Blood vessels are scanty, and yet metastases occur. This tumor is of a long clinical course, and there are clinical and anatomical grounds for recognizing it as a specific type.

"The structure in general of osteogenic sarcoma varies, as already noted, according to the differentiation of the fibroblasts. In the more malignant tumors, the cells are closely packed together, and of irregular form, some spindle and some round, either one of which may predominate, and the intercellular substance appears only as a scant trace, or is completely absent. Many blood vessels are present. In the more slowly growing sarcomas the spindle and round cells will be much less numerous, the intercellular substance predominating, or even present in great abundance, and will be seen to consist of fibrous, myxomatous, cartilaginous, or osteoid tissue, or any combination of these. The vascularity of these tumors is poor. A particular characteristic of the periosteal spindle cell sarcoma is the production of bone or cartilage."

2. Benign Giant Cell Sarcoma, Chronic Hemorrhagic Osteomeylitis, Giant Cell Tumor, etc., is perhaps the most peculiar and interesting condition affecting the long bones, and has long been a zealously studied subject. It occurs principally in the marrow cavity of the long bones and causes an absorption of the cancellous bone, and widening of the marrow cavity, as the periosteum lays down an advancing shell of new bone. It, therefore, typically causes expansion of the bony shell. In its gross appearance it resembles hemorrhagic granulation material, is a soft, reddish, jelly-like tissue. There is seldom any tendency to invade the soft parts it never gives rise to metastases, and is generally agreed to be benign. Failure to distinguish between this benign process and the malignant, less frequent central sarcoma, has resulted in the needless sacrifice of many limbs. (The constant benignancy of this tumor has led some observers to class it among the inflammatory lesions of bone, while others do not consider it among the sarcoma but simply use "Giant Cell Tumor" to specify this particular type of lesion.) There is sometimes a good deal of variation in the bone absorption and rate of growth in these tumors, but they have never been known to yield metastases. Rarely they may penetrate the bony capsule and spread through the soft parts. At times they present multiple tumors. In structure the giant cell sarcoma is composed largely of numbers of giant cells of the foreign body type supported by a loose stroma of fibrous tissue and spindle cells. Blood vessels are numerous, and the tumor quite vascular.

3. Myeloma is a specific malignant tumor of the bone marrow. The involvement of the bone is often diffuse, and the development from multiple foci. In structure it is composed of closely packed plasma cells. It is a relatively rare tumor, and a fatal termination is usually the result. (Myeloma has also been known as Myelogenous Pseudoleukemia, Multiple Sarcoma of Bone Marrow, and Mollities Ossium.)

4. Endothelioma, occurring primarily in a bone, has not been permanently established, and the diagnosis requires special caution, and rigid elimination of outlying primary foci, as small carcinomas of the stomach, thyroid, prostate, and particularly the adrenal and kidney. The presence of this tumor as a primary lesion is a rare possibility.

Diagnosis is the real problem with which one has to deal, and the earlier the disease is recognized and treatment begun the greater the prospects of cure. It is unfortunate that most of the recorded cases of bone sarcoma have come to treatment only after the symptoms have been present months or years.

a. *Symptoms.* Trauma is generally thought to play a particular part in the development of the symptoms, but any positive knowledge as to how it acts is lacking. It is certainly true that in many of the histories the symptom of onset begins after some local trauma to the limb.

The first conspicuous symptom of bone sarcoma is pain. It is the "earliest and most important sign of sarcoma of the long bones" remarks Coley, and Bloodgood urges that "in all bone tumors pain is the predominant symptom." The pain is of a deep and boring character and often present weeks or months before there is a palpable tumor, or the x-ray discloses the evidence of a new growth. These patients are not unusually treated for "rheumatism," chronic arthritis, etc. With a previous history of trauma, and a subsequent persistence of marked local pain, there is strong possibility of a bone lesion, and an x-ray ex-

amination should be urged. Too often, perhaps, we fail to make use of this means of diagnosis, probably because there is no obvious appearance of local disease, and accordingly very early lesions escape recognition.

Following the pain by a variable length of time, depending upon the degree of malignancy of the tumor, there is swelling. In periosteal sarcomata this may be very great. In central sarcomata, it is not so large, and usually means that the growth has perforated the bony shell, and begun to infiltrate the soft parts. Exception to this is found in the giant cell sarcoma, which long remains confined to the bony shell, and produces swelling by causing expansion of the end of the bone.

In central growths, or in periosteal which have eroded and destroyed much of the shaft, pathological fracture at times occurs. A fracture received as the result of a very trival injury always suggests the possibility of a bone cyst or tumor.

Impairment of function is also at times a symptom, particularly in the leg, and limping occurs. There is, however, never the muscle spasm and atrophy that is seen in tuberculosis.

These are the symptoms most commonly met with. Trauma followed by persistent, localized pain, and later swelling, without temperature, muscle spasm or atrophy, suggests the possibility of a cyst or tumor. It is to be urged that invariable pain in a bone near a joint, even without swelling, without tenderness, or any other local evidence of disease, should not be treated as "rheumatism, neuritis, neuralgia," etc., but demands to be followed carefully with x-ray examinations.

The duration of the symptoms may have an important bearing on the interpretation of the case. If it is more than two years since the symptom of onset, pain or swelling, or pathological fracture, if the lesion is central, the probabilities are that it is a giant cell sarcoma or a benign bone cyst. In the periosteum, a long duration of symptoms means a slowly growing, less malignant tumor.

b. *X-ray* is an invaluable means of recognizing and interpreting bone sarcoma. Periosteal sarcoma, when well developed, can readily be recognized by the x-ray character, but in very early stage may be easily confused with any chronic inflammatory ossifying periostitis. In the well developed case one sees a rather dense shadow about the shaft of the bone, sharply localized, and what is most distinctive are the trabeculae of new bone formation radiating outward from the shaft into the tumor. The shaft may or may not show evidence of destruction. In the central tumors, the difficulties are more marked, because of the frequency of benign lesions in the marrow cavity. This also is the common location for the giant cell sarcoma, a benign, non-metastasizing, curable disease, and it is highly essential that it be recognized as such. In the central sarcoma, one sees an area in the end of the bone of marked absorption, with abrupt and sharply defined limits, and a thinned out, but not expanded cortex. The periosteum may or may not be laying down a thin shell of new bone. Ultimately, the tumor breaks through the thin shell of cortex, and infiltrates the soft parts. In the giant cell sarcoma there is commonly marked expansion of the cortex without perforation. A bone cyst is the only other sort of lesion that gives anything similar to this picture. In the giant cell sarcoma there is usually a characteristic mottling in the area of rarified bone.

c. *Exploratory Incision*, in order to make a diagnosis, is recognized at the present time as not only justifiable but indicated. Years ago there was some difference of opinion regarding the wisdom of this procedure, but, so far as I can learn, most all authorities are now agreed upon this method. Coley remarks, "I still believe that in cases in which there is any reasonable doubt of the diagnosis, the advantages of an exploratory operation greatly outweigh the disadvantages." Bloodgood was perhaps the first to urge it, and most others have followed the plan. By this method the surgeon is able to inspect the gross appearances of the tumor, and determine the type and possible malignancy. Further, sections may be removed for microscopic study, and a more exact diagnosis obtained. With the findings from these, proper treatment can be more accurately instituted, and the histological type certainly gives us a great help in making a prognosis. The danger from metastases after exploratory operations is slight, and the value of knowing the type of tumor one may be dealing with far outweighs the risk.

The tremendous significance of an accurate diagnosis in sarcoma of the long bones should be well recognized, since it is to determine the plan of treatment, and materially aid in forecasting the result. There is so much variation

in the degree of malignancy of bone sarcoma, particularly when the giant cell type is included, that the plan of treatment can only be indicated clearly after a reasonably sure diagnosis is made. With the diversity of these tumors, their differing manner of growth and bone destruction, there naturally are some cases that will remain obscure in spite of our efforts. The same tumor will vary in different bones, and in different individuals. Pathologists will not always agree in regard to the histology, and it is therefore important that several skilled in the microscopic appearances of tumors be allowed to study the sections. Yet, in the majority of the cases the clinical features, the x-ray characteristics, the macroscopic and microscopic appearances associated will establish an accurate diagnosis.

TREATMENT depends on the diagnosis, and is planned to meet the needs of the individual case. Immediate amputation in all cases of sarcoma is obsolete treatment, and results in the unnecessary sacrifice of limbs. Ex-articulation, amputation, local resection, curettage, radium combined with Coley's toxins, represent the extremes of treatment.

In periosteal growths amputation is the rule in the majority of cases, and ex-articulation is demanded only in certain very malignant and widely infiltrating cases, or when the tumor involves the upper end of the humerus or femur. The figures of Jenckel seem to conclusively prove that in sarcoma of the lower end of the femur, ex-articulation at the hip joint gives no better results than high femoral amputation. This, I think, may be applied to other bones; when high amputation fails, ex-articulation can promise little or no better results. Regardless, however, of the extent of the operation, the resulting fatality is so high, with a possibility of cure in only 4% of cases, that one form of treatment seems no better than another, and this fact has led some surgeons to favor more conservative methods of treatment. Chief among these is Coley, who treats all periosteal sarcomata conservatively by the use of the mixed toxins of streptococcus and prodigiosus, sometimes combined with radium. In 1919, he reported a series of cured cases, some of which were cured alone by the use of the mixed toxins, others by the combined use of the toxins and radium. Radium alone has cured no cases. He thinks that better results could be gained from this treatment if begun earlier in the progress of the disease. The radium is applied locally after as much of the tumor as possible has been removed. The toxins act as the systemic remedy.

In the treatment of the central growths, exact diagnosis of the type of tumor, the degree of malignancy, and the progress of the disease, are essential in deciding the method of treatment. Any one of several forms of treatment may be indicated by the type of tumor.

In the giant cell sarcoma, curettage of the bone cavity, and cauterization with carbolic acid and alcohol, promises a complete cure in the great majority of cases. When the tumor, as occasionally happens, has broken through the shell of bone (and filled the soft parts), there is no contraindication to the conservative treatment. (Bloodgood). Local resection then may be the most that is necessary, and curettage followed by the use of carbolic acid and alcohol may be sufficient. If not all of the tumor is removed from the soft parts, a local recurrence will take place, but even under these circumstances two or three curettments will eradicate the disease. This tumor never gives rise to metastases, and recurs locally only when incompletely removed, and is therefore benign. Barrie considers it an inflammatory lesion and calls it "Chronic Hemorrhagic Osteomyelitis;" Bloodgood speaks of it as the "Giant Cell Tumor." The great thing about this lesion is to recognize it, and not to confuse it with malignant central osteogenic sarcomas, a differentiation that is by no means always easy.

In the treatment of osteogenic central sarcoma, the lines of procedure are very much as in the periosteal, except that in some cases, seen early, local resection of the bone may serve, and the limb be saved. Resection, however, should be confined to small, slowly growing, encapsultated central sarcomata, which have not perforated the periosteum, and infiltrated the soft parts. In the rapidly growing, cellular tumors, amputation is the indicated treatment. Bue here again prospect for cure is discouraging, and only 8% of the cases survive. Coley's toxins and the use of radium locally after all tumor tissue has been cleared away have cured some cases, and is advocated by by Coley.

Bone sarcomata are perhaps the most highly malignant of all tumors, and metastases occur

early. The majority succumb to internal metastases, chiefly to the lungs. Perhaps the high mortality rates are in part due to the fact that very few cases are recognized in the beginning, and, when first seen, are far advanced with internal metastases already present. Our only chance then, until something more is known concerning the real etiology, must depend on the early detection of the malignant process. Fewer diagnoses of the hazy disease known as "rheumatism," more frequent use of the x-ray, and exploratory incision would be of great advantage.

THE PROGNOSIS is generally bad, but the widest extremes are represented in the different sarcomata. The age of the patient, the duration of the disease, its rate of progress, the particular bone affected, the completeness of the operation, and, above all, the structure and essential malignancy of the tumor, must all be considered. Subjects under twenty years withstand the progress of malignancy but poorly. Slow growing tumors are less malignant, but may produce early metastases, or be changed into actively growing tumors. The presence or absence of infiltration of the soft parts is an important question in the prognosis. When present, it complicates the operation and favors the invasion of veins and metastases. Kramer thinks that encapsulation is the most important single factor in the prognosis of most bone sarcomata. Rapidity of growth usually is a very reliable sign of the degree of malignancy. Histological studies are very important in estimating the prognosis, and should always be carried out. In short, the prognosis is best obtained in the light of all data, clinical, x-ray and pathological.

705 *South Tryon Street.*

THE ADVANTAGES AND METHODS OF MAKING LABOR EASY.*

By IVAN PROCTER, M. D., Raleigh, N. C.

Suffering during labor is the worst that the human race has to endure. It is the same as that resulting from actual cutting and irritation of nerve filaments; in surgery and labor alike it produces shock and exhauston. In labor it lowers resistance, increases the chances of infections, doubles the number of forceps operations, prolongs the puerperium and, in general, raises the morbidity and mortality of childbirth. Shock and exhaustion are both reduced to a minimum in surgery by the use of anesthetics and the elimination of pain. Why shouldn't the parturient woman be given the same relief and protection as the surgical patient? Our[1] modern civilization, with its higher educational standards and more protection and environment, has developed a type of nervous system that is very susceptible to painful impressions. Thirty years ago Lusk[2] warned us that: As the nervous organism loses in its power of resistance as a result of higher civilization and artificial refinements, it becomes imperatively more necessary for the physician to guard parturient women from the dangers of excessive and too prolonged suffering.

Today the most reliable statistics show that we are losing nearly one per cent of parturient women and 10% of the babies. Warrick[3] and Bailey having demonstrated that 40 to 50 per cent of the infants that go to autopsy have intra-cranial hemorrhage. Such authors as Kroenig, Polak, Davis and De Lee agree that labor is physiologic in its object but that it is actually pathologic in a large number, if not in a majority, of cases.

I feel that something should be done to protect modern women against the destructive forces of childbirth, and the most sane method of doing this is to eliminate pain and too prolonged suffering.

There are many advantages derived from making labor easy. First, it robs motherhood of its terrors and eliminates both shock and exhaustion. It reduces the chances of sepsis, by clean technique, diminished suffering, and shortened labor. The chances of cerebral hemorrhage in the child are lowered by lessening the time of forcible compression of the head. Post-maturity dangers are forestalled by inducing labor before signs of disproportion develop. The fetal mortality is lowered by controlling the voluntary muscular action of the patient and by timely interference. Finally, the strength of the patient is preserved, the puerperium is shortened, and the convalesence more complete.

The preparation of the patient is a very important step in making labor easy. It cannot be accomplished at the time of labor, but must consist of a thorough study and detailed care throughout pregnancy. Such attention furnishes for labor a well balanced healthy subject from whom all fear and dread has been removed and in whom confidence has been es-

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tablished. Reports from Boston[4] show that proper prenatal care reduces the number of stillbirths 50% and the infant deaths 65%.

The most direct method of making labor easy is by the means of anesthetics. King[5] claims to have used local anesthesia with success. He injects 1.5 c. c. of a 2% novocaine in the superior perineal space and 5 to 10 c. c. of a 1% into the ischio-rectal fossa. We have three general anesthetics, all of which relieve pain with equal satisfaction, but there is a difference in their safety and practicability. Chloroform, according to H. C. Davis[6], of Milwaukee, is the most dangerous on account of its destructive action to liver cells. Potter and others use it extensively and do not report ill results. Ether is usually the better anesthetic on account of its entire practicability, safety, and better relaxing power, which is important at birth. Nitrous oxide is probably the ideal anesthetic where relaxation is not required. Its objections are:—It is more cumbersome to use, more expensive, more dangerous to the fetus, if given continuously, and more immediately dangerous to the mother if not in the hands of an experienced anesthetist. I use chloroform and nitrous oxide in selected cases, but ether in the majority.

The time of beginning analgesia is determined by the amount of suffering and not by the dilatation of the os, as recommended by some authors.

The most ideal anesthetic for the first stage of labor is morphine and scopolamine. This form of analgesia brings relief to about 90% of the women upon whom it is used. Kroenig[7] and Gauss, of Freidburg, use it only in a hospital where the obstetrician is in absolute control of the case. A dark quiet room being selected, the patient is given a thorough examination and prepared for delivery. The initial injection of morphine sulphate, gr. 1-4 to 1-6, and scopolamine hydrobromide, gr. 1-200, (using Merck's fresh sterile solution) is given when labor is well established. The memory test, which consists of showing the patient an object, for example a pair of scissors, and repeating the exhibit in 30 minutes, to see if she remembers having seen it, is used as a guide to other injections. If there is loss of memory, the injection is withheld, whereas if the patient remembers having seen the object, 1-300 to 1-400 gr. of scopolamine is given. The number of injections varies, but usually good results are obtained with 4 doses. A well trained nurse must be in constant attendance and a physician available. As soon as the baby is born, it is essential to remove it to another room so that the mother will not hear it cry, and probably reconstruct the entire labor. Wakefield,[8] of San Francisco, uses morphine scopolamine extensively, and gives gr. 1-6 and 1-150 at the beginning of labor. He uses Merck's crystalline scopolamine that has not been exposed. A half to three-quarters of an hour after the initial injection, depending upon the severity of the pains, he gives scopolamine gr. 1-200, and the patient is soon under the influence of the drug. All subsequent doses depend on the requirements of the individual patient. Individual susceptibility and severity of labor pains both play a part in deciding the time of subsequent doses. There is no rule, the patient being given an injection when she needs it, and here experience is very helpful. In general, it may be said that after the second dose, 1-300 gr. is required about every 2 hours. The characteristics of a patient under scopolamine are flushed face, dry throat, dilated pupils and a partial loss of consciousness. There are many modifications of morphine scopolamine analgesia but it seems necessary for each man to work out a technique that gives him and his patients the best results.

I use it in the majority of cases, and give the initial dose of morphine gr. 1-6, scopolamine gr. 1-100 to 1-200, when labor is definitely established, and the patient begins to suffer. This injection usually puts the patient into a dazed condition with incoherent speech, sleep between pains and partial loss of consciousness. After labor progresses for an hour or more and the effects begin to wear off, the scopolamine is repeated, using gr. 1-200 to 1-400. After the second or third dose, the average patient will have reached the second stage when the morphine scopolamine can, if necessary, be supplemented with a whiff of chloroform during the pains.

The memory test of Gauss[9] is unnecessary and cannot be relied upon. Blue babies are unheard of if morphine is not given after initial injection. There is no definite prolongation of labor if the drugs are used just to relieve pain and the patient is not too thoroughly narcotized. This procedure, I belive to be the safest, most efficient, most useful, and most important method of making labor easy. As Mocher[10] puts it, scopolamine is the greatest

boon in obstetrics since the advent of anesthesia and asepsis.

The next important method of making labor easy is shortening the process. I am in sympathy with the principle of shortening labor in the individual case when there is an indication, but not as a routine. I believe, too, that the indications are far more frequent than our text books and some professors teach. Too severe or prolonged suffering is just as much an indication to shorten labor as is malposition or obstruction. Shortening such labor by skilled hands yields much better results than allowing the patient to drag on to completion by her own efforts. The method to be employed depends upon the individual case and the circumstances surrounding it.

The timely induction of labor is a means of shortening the process and making it easy, in that it prevents post-maturity complications. Post-maturity with a normal pelvis creates the same obstetric problem as contracted pelvis with a normal baby. To Reed[11], of Chicago, we owe a great deal for developing the modern use of hydrostatic bags. Like other instruments, if improperly used, they may be a menace to child-bearing women, but if skillfully used in the individual cases, they may be a means of reducing maternal and fetal morbidity and mortality.

The prophylactic forceps operation, described by De Lee,[12] about a year and a half ago, is a means of making labor easy. De Lee's technique is no doubt executed with success in his hands, but it is too radical for most men, and I know of no one who is using it as described. Many obstetricians do a prophylactic forceps operation in individual cases when nature is not making sufficient progress in delivering the child. The secret of success comes with gentleness and proper cephalic application, but most important of all is knowing when to interfere. If interference is too early, the obstetrician does the damage; if too late, nature does it. Important points in the operation are: Absolute asepsis; surgical anesthesia; ironing out the vagina and perineum; accurate cephalic application; removal of the forceps as soon as the chin can be controlled through the perineum and the modified Walcher position. The cases that are best suited for operation are those that have reached the perineal stage. When it is necessary to apply forceps before this stage, the use of axis traction[13] instruments gives better results, in that they allow the head to follow the course which corresponds to the normal mechanism of labor.

Occiptoposterior[14] positions are among the most common obstetric complications and cause a large percentage of prolonged painful and difficult labors. Bill corrects the malposition by a modified Scanzoni procedure and delivers with forceps. I have found podalic version, using Potter's[15] technique, to be the best treatment in most cases, because the head often goes back to its original position after rotation and version must finally be resorted to. In many cases such as those where the head remains at the pelvic brim, whether due to malposition or slight contraction, insufficient or misdirected pains, and in toxemia where it is essential to have a quick delivery with a minimum amount of pain and shock, podalic version seems to be the best treatment. It has been my pleasure to spend a week with Dr. Potter, of Buffalo, and it would well repay any obstetrician to see him work. I am not an advocate of routine podalic version, but this form of delivery has a much wider field than that in which we have been in the habit of applying it.

The important features in Potter's technique are:—Absolute asepsis; surgical anesthesia, using chloroform and the same anesthetist with all cases; relaxation of the perineum and vagina by the "ironing out" process, and the modified Walcher position; rupturing of the membranes high up with retention of the amniotic fluid which aids turning; bringing down and delivery of both feet together; gentle extraction without haste at any time; delivery of the scapula before any attempt is made to deliver the shoulders; rotation of the posterior shoulder to the anterior position and delivery as such; the lack of external pressure until after the shoulders are delivered; slow delivery of the head in compete flexion, the patient in the modfied Walcher position.

E. P. Davis summarized efforts at making labor easy by saying, "There is no logical reason why woman should suffer during labor. Suffering, both physical and mental, produces surgical shock. It increases the danger of puerperal complications and delays convalescence. The suffering can be relieved with perfect safety to both child and mother."

The methods of shortening labor are sometimes called meddlesome midwifery, and for some men rightly so; but[16] if we can do these operations without danger or with very much

less danger to the patient than if we let nature take her course, then we must conclude that such interference is not only justifiable but advisable. Let every man be honest and recognize his limitations; for one man watchful waiting, for another analgesia, anesthesia and methods of shortening labor.

This is such a large subject it would require several hours to go into a detailed description of the different methods of making labor easy. However, I have tried to present the subject in a broad manner and hope that from the discussion we may gain something that will be helpful in our struggle for better obstetrics.

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THE SUBMERGED TONSIL.*

By D. L. RAWLS, M. D., Suffolk, Va.

For the past few years there has been a good deal of study and research work, and volumes upon volumes written on the subject of the tonsil.

We must admit, however, as specialists in other fields of medicine and surgery, that we are more or less inclined at times at least, to have fads or hobbies. It is true, no doubt, that there have been indiscriminate operations on the tonsils, possibly by the skilled as well as the unskilled surgeons. On the other hand, think of the hundreds of chronically infected tonsillar victims who have passed through our offices, undetected and unrelieved. They were not only suffering with throat symptoms and head complications, but constitutional symptoms as well. While that has been more or less the condition in the past, it is not quite so bad today and we hope that in the near future it will still be better or not at all.

Medical science has been making wonderful progress in all branches of medicine, especially for the last few years, and the throat specialist is no exception. With this increased knowledge, it should encourage us one and all to take a fresh hold, so to speak, that we may diagnose our cases in their incipiency, thereby not only relieving suffering humanity, but preventing many premature deaths. All of us well know with all our modern equipments and accessories it is often very difficult to say when a tonsillectomy is indicated and when it is not.

The type of faucial tonsil I wish to speak of briefly is the submerged variety. This is the type that many physicians, internists as well as specialists, look on as harmless, and accordingly advise against a tonsillectomy. As a matter of fact the importance of the tonsil as a focus of infection does not increase with its size, nor has it any relation to it.

To understand and appreciate more fully the local and systemic conditions as the result of tonsillar infection, I wish to run over hurriedly some of its clinical anatomy. The faucial tonsil is situated in a triangular depression on the lateral wall of the fauces. This depression is called sinus tonsillaris and is bound anteriorly by the anterior pillar which contains the palatoglossus muscle, posteriorly by the posterior pillar which contains the palatopharyngeus muscle. The pillars meet above to unite with the soft palate. Inferiorly they diverge and enter into the tissues at the base of the tongue and the lateral wall of the pharynx respectively. The outer or external wall is composed of the superior constrictor muscle of the pharynx. This anatomical relationship or construction, which partially or completely envelops the tonsil, is not only important from a diagnostic point of view, but from a medical and surgical as well. In every act of deglutition, these muscles come into action, especially the superior constrictor muscles of the pharynx thus compressing the tonsil. Grober cites authorities who claim that

*Read before the Seaboard Medical Association in Norfolk, Va., December, 1921.

the compression of the muscles forces food and bacteria into the crypts, rather than out of them. The tonsil is composed of from eight to twenty of these crypts or tubular depressions. They almost invariably extend the entire depth of the tonsil to the capsule on its outer surface. Clinically, the crypts seem to be the source of the greatest amount of local and constitutional disturbances, as they often become filled with food, tissue, debris and pathogenic bacteria. This is especially true of those submerged or capped over by adhesions and overlying membrane, as the plica supra-tonsillaris and the antero-inferior portion of the tonsil which is covered by the plica tonsillaris. It may be stated as a general law in physiological pathology, that mechanical obstruction to the drainage of any secreting cavity tends to result in local morbid processes and in toxic or infectious manifestations in remote parts of the body.

Writers and authors have classified the tonsils in various ways, as to pathology and morphology. For practical purposes I wish to classify them with regard to their anatomic relationship to the adjacent structures, especially to the tonsillar pillars, into three types or groups. The first type is the submerged tonsil, or the tonsil that is partly visible: the second is the tonsil presenting in front of the tonsillar pillars; the third is the very large obstructing and pendulous tonsil. The first type is most important as well as most serious, because it is the one that is most overlooked. It is very easy to advise for or against a tonsillectomy in the second and third type, but it is more difficult in the first variety. In taking the histories, do not let the patients mislead you by saying they never had any throat trouble. They may be earnest in their statements and never have had any trouble with their throats or they have had sore throats in the past and have forgotten them, and last but not least, they may have a horror of an operation. While it is important to take the history in every case, we should not stop there, for every tonsil should be examined thoroughly. Drs. Lillie and Lyons, of the Mayo Clinic, in a series of 200 cases suffering with myositis and arthritis secondary to chronically infected diseased tonsils of the submerged or just visible type, found that only 57.7% of the patients gave a history of tonsillitis, leaving 42.3% of the cases, almost half, with no tonsillar history at all. I think this is one of the most important points in all of our tonsillar work.

We all know that quite frequently it is very difficult to explain and make some patients understand a diseased condition, when they have had subjective symptoms in that immediate area. How much more difficult it is to make one comprehend a pathological condition, when they claim they have never had any trouble in that region! That is what we laryngologists often have to confront, especially in dealing with the submerged type of tonsil.

When the diagnosis has been made, it is needless to say what to advise. There are various and sundry methods and techniques in removing submerged tonsils, but the essential point is to remove it completely with the least amount of trauma to the surrounding parts.

BRIEF REMARKS ON SINUSITIS, WITH REPORT OF CASE.*

By N. J. GOULD, M. D., Norfolk, Va.

Sinusitis, and we of course are concerned with the accessory cavities of the nose, means inflammation of the sinuses. As is all inflammatory conditions, so here do we find that sinusitis may be, from the clinical standpoint, either acute or chronic, from the pathological, suppurative or non-suppurative.

It is, I believe, the consensus of opinion that the underlying factor in any form of sinusitis is defective or total absence of ventilation in the sinuses. No matter what may be the particular exciting cause in any given case, the subsequent course is invariably due to interference with proper aeration and consequent drainage of the sinus.

We know that the sinuses are lined by ciliated columnar epithelium, with the motion wave of the cilia directed towards the ostia. Investigators have conclusively proven that the cilia will dispose of bacteria or any other foreign matter that may enter a sinus.

Supposing, however, you have a septum so deviated as to alter the respiratory phase in so far as the nose is concerned, can you not see how easily other disturbances may follow? You have a change in the circulation of the nasal structures—congestion or hyperaemia, and, if extended over a long period of time,

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hypertrophy of the turbinates. This in turn immediately occludes either partly or completely the normal openings of the sinuses into the nose, hence stagnation of the normal secretion in the sinuses. It follows almost as a necessary corollary, that the mucosa of the sinus must suffer thereby, both in structure as well as function. What is more logical to deduct than, given a sinus with a mucous membrane whose natural function is impaired, that micro-organisms, once they gain entrance into such a sinus, would simply thrive and give rise to various types of sinusitis first mentioned. Or, let us take an individual who is a subject of frequent attacks of rhinitis. Here likewise do we have a similar series of events: repeated engorgement of nasal mucous membranes, corresponding changes in the sinuses, furnishing a soil fruitful and inviting for the growth of infective micro-organisms.

We readily recognize that the fundamental principle in the causation of sinusitis is mechanical—interference with ingress of air and egress of secretion. There are, however, a number of contributory or exciting factors that obtain in the causation and character of sinusitis.

We are aware of the importance of climate. I am sure everyone of you has had the experience of hearing a patient state how much better he felt during a short stay in New York, or during the summer months at Virginia Beach. On the contrary, many find the local climate much more suitable.

A not inconsiderable role do micro-organisms play in sinus infection. In fact the progress of the disease is often entirely dependent upon the particular invading organism. We know, for exmaple, that the influenza bacillus and the pneumococcus give rise to most virulent infections. I do not, however, wish to leave the impression that it is the organism that determines the severity of the disease, for in reality it is due to the virulence rather than the type of organism.

That dental caries is responsible for a large number of cases of sinus disease, mainly the antrum, is universally conceded. As to its frequency, there seems to be a divergence of opinion. Generally, however, we consider the incidence of dental etiology about 20%. Permit me to digress a moment to mention that occasionally the teeth become infected as a result of primary antrum disease. Several cases of this nature were recently reported in the medical literature. A relatively small percentage of sinus infection owe their origin to a general systemic infection, mainly syphilis. But there is as yet no confirmatory evidence to support the idea that either syphilis or tuberculosis is ever primarily involved in sinusitis.

I shall leave the discussion of etiology with the mentioning only that a few cases of sinusitis may be attributed to direct trauma. The paucity of this condition impels me not to dwell upon it at greater length.

Sinus disease is accompanied by variations in its symptomatology. We are chiefly concerned with two—headache and "throat-clearing." By that I mean that it is the one or the other that brings the patient to us. It is the pain of the one and the annoyance of the other, for which the individual is compelled to seek relief.

The headache is indeed so variable that it does not always determine for us the character and seat of the infection. It is not constant; it is remittent; it does not confine itself to one area. It may be a dull, true aching kind, oftimes described by the patient as a heavy feeling. And again, it may be so excruciating as to occasion loss of appetite, insomnia, nausea, and even despondency—a type of headache that often fails to respond to the most energetic treatment. No part of the head is immune from pain. While the headache is admittedly frontal in the large majority of cases, the other regions may suffer as well, and it is not uncommon to have patients complain of severe occipital and parietal pain. Quite a number will assert that their headache is most intense on bright, clear days, and they are more comfortable when it is cloudy. I recently had one patient tell me that the only time she is free from headache is during her menstrual period.

The clearing of the throat is one of the most annoying conditions with which a person has to contend. Not only is it exceedingly troublesome, but quite embarrassing as well, particularly if in the course of his daily occupations the patient is thrown in contact with many people. We can not deny that presence of pus in the nose is not necessarily indicative of sinus disease, or absence of purulent discharge means a healthy sinus. Yet, I can not help but feel that persistent clearing of throat

with the expectoration of purulent material is pathognomonic of sinusitis.

After the patient has come to consult you about one or the other of the above symptoms, you will elicit the information, in the course of taking the history, that the patient may have occasional attacks of vertigo, dizziness, which becomes more marked when stooping or during rapid change of the position of the head. Many individuals will complain of laryngitis in varying degrees, due to irritation caused by the nasal secretion. Then again, the sense of smell may be impaired or totally destroyed. An offensive breath and gastro-intestinal disturbances may manifest themselves either as a result of the swallowing of purulent secretion or through absorption. No part of the body is free from becoming affected.

Let me again emphasize that it is the headache and the expectoration that brings the patient to your office. But I am not unmindful of the fact that there are two other conditions from which many suffer, and I shall mention them. Though their number be but few, their significance is unquestionably equally as, if not more, serious; hence, their importance.

I have already alluded to one, when I stated that any part of the body may be affected through the absorption of toxins. In other words, the sinus may become a focus of infection, producing constitutional disturbances. They indubitably occupy a position inferior to the teeth and tonsils; their responsibility, however, can not be made light of. Visual disturbances consequent upon abnormal conditions in the sinuses, and I am using this phrase advisedly as I shall presently point out, is attracting greater and greater attention the more we investigate the relation between ophthalmology and rhinology. This visual disturbance may be so slight as to be disregarded, but how many cases of extreme impairment of vision, even blindness, have been considerably helped, even cured, by curetting the ethmoids and opening of the sphenoid! This is a field replete with vast possibilities for study and investigation. It is my belief, that we have barely scratched the surface.

The literature describes many cases, where the individual having lost his vision had been greatly benefited by opening of the sphenoid, which was apparently, and let me stress this, *apparently* found normal, with perhaps a slight hypertrophy of its mucosa. That is why I used the term "abnormal condition" rather than infection of the sinus, for you may restore vision, though no evidence of infection be present. In most cases the history and physical examination will reveal the diagnosis. I wish to emphasize the fact that the mere presence of pus in the nose is not indicative of sinus trouble. The immediate reappearance of pus, however, is absolutely pathognomonic of sinusitis—a very important point to remember—since in an ordinary rhinitis, the nasal mucous membrane is incapable of secreting purulent material under your very eyes, as it were, and it is quite obvious that pus must be concealed somewhere.

It is always advisable, almost indispensable, to have radiograms of the sinuses. A careful study and proper interpretation of plates will assist you in deciding whether or not sinusitis exists. Often, even the type and character, suppurative or non-suppurative, and what particular sinus is involved, will be disclosed. Suction is of inestimable value, not only as an aid in diagnosis, but as a therapeutic agent as well.

Now we come to the question of treatment and I must say at the very outset that there are no specific methods which can be applied to all cases. Every patient presents a problem for individual study, and must be dealt with in accordance with the factors peculiar to that case.

We can not treat the patient who comes to us with severe headache of several days' duration, as in acute sinus infection, precisely in the same manner we treat one, who has been suffering for months, perhaps, years, as in chronic cases with acute exacerbations.

Nasal cavities with extensive polypoid formation are treated differently from an antrum diseased as a result of a tooth infection.

When repeated attacks of rhinitis, the precursor of sinusitis, are due to infected tonsils (you will admit not an unusual condition), the measure resorted to to obviate them is naturally tonsillectomy, while the mucosa of the frontal sinus only moderately hypertrophied as a result of hyperaemia of the middle turbinate, which impinges upon the ostium, may be restored to normal by one or more applications of adrenalin to the turbinate.

You would not put to bed a man suffering from acute frontal sinusitis and who is improving under treatment—a man whose very

existence depends upon his daily labor. A hypersensitive woman, however, similarly afflicted, is probably best cared for if confined at home. It is quite likely she would go to bed of her own accord.

My object in repetition is to emphasize that each case must be studied painstakingly, and the remedial measures applied to be in accordance with the special needs of the individual. Only one word more with reference to treatment—and this a word of caution. When operative interference is deemed imperative, conservatism should be the guiding principle.

I am cognizant of the fact that this subject was very inadequately presented. It is so vast that to attempt elaboration of any one of the aspects of sinusitis would require a great deal of time. You must have noted that I did not even refer to pathology or complications. The case that I am about to report will direct your attention to the possible complications of sinus infection, and will also embody much of what I have so cursorily covered in my brief remarks.

Report of Case.

A white schoolboy, age 17 years, came to get relief for severe right frontal headache, from which he had been suffering continuously for six days. No therapeutic measures administered by his family physician had given him any freedom from pain. Aspirin was the only drug that enabled him to fall asleep for short periods.

History: His family history is unimportant. The patient had to clear his throat of purulent material a number of times during the day for the past 3 years. Had frequent attacks of headache and occasionally dizziness. He complained of a very offensive breath. Had all his teeth extracted about a year prior to his seeing me, and is now using dental plates.

About 10 days ago (March 1922), patient had a cold followed by severe headache on the left side, lasting 2 days. Three days later he had a similar headache on right,—which had not left him.

Examination revealed that both nasal cavities were just bathed in creamy pus, more on the left side than right. The septum had a high deviation on the left side, while the right middle turbinate was wedged in between the septum and lateral nasal wall. No sooner was the pus mopped away, when it reappeared immediately. One could elicit definite tenderness upon pressing the inferior wall of the frontal sinuses. Adrenalin did not have the slightest impression upon the right middle turbinate, and suction did not reach the right frontal sinus. Radiography confirmed the diagnosis that the two antra and frontals were filled with pus.

Progress: The anterior third of the right middle turbinate was removed to facilitate drainage of the right frontal sinus. Patient's headache practically disappeared within ten minutes after the partial turbinectomy and emptying of the frontal sinus by suction. Did not pack the nose. That same evening patient had a chill followed by a rise in temperature to 102 degrees. The right upper lid became slightly oedematous the following morning: oedema increased during the next two days, but diminished on the fourth, persisting, however, throughout the entire course of the disease. A week following the turbinectomy, there was slight exophthalmos of the right eye, and since the temperature range was between 99 degrees and 104 degrees, it was deemed advisable to open the right frontal sinus. A modified Killian was performed on both frontals, on account of finding the septum between the right and left frontal partly destroyed, and pus in both. The ethemoids were curetted and right sphenoid opened. The purulent secretion was diminished within 24 hours. The patient, however, continued to grow worse, and exophthalmos became more marked. There was an undoubted orbital abscess which was incised and pus evacuated, two days following the Killian operation. Patient continued to retrogress and died 3 days later.

During the two weeks following the turbinectomy, the patient was free from headache or other pain. He complained only now and then of pain in right lower region of the neck, and over cardiac area, where an unquestionable dry pericarditis was found. Only once, four days after the turbinectomy, did he complain of a deep seated pain in the eye. He became semi-conscious and slightly delirious the day preceding and comatose the day of his death. At no time was there the slightest evidence of meningeal irritation: no rigidity of neck; no change in reaction of reflexes: no gastro-intestinal disturbances.

Save for the right exophthalmos, which was downward and outward, there was no abnormality in the eyes.

The temperature range, as already stated

was from 99 degrees to 104.5 degrees, pulse 96 to 120 and very much faster the last two days of his life. The respirations were normal on some days and rose to 36 on others. This is interesting, for we often find this irregularity in cerebral abscess. It was increased to 50 and 60 the last 48 hours. No evidence of pulmonary involvement.

LABORATORY: Leucocyte count averaged 18,000, with polymorphonuclears 85%. Repeated blood cultures were negative. Wassermann negative.

Spinal fluid under very slight pressure, clear, and a cell count of six. Globulin negative. Stained smears negative for bacteria.

Cultures from sinus showed pneumococcus growth, smears showed very small diplococci, some forming short chains. Many were intracellular and quite a few extracellular.

Urinalysis negative.

It is regrettable that no autopsy could be obtained.

331 *Dickson Building.*

VENEREAL DISEASE FROM THE ARMY STANDPOINT*

By M. C. SYCLE, M. D., Richmond, Va.

Chief of Urology and Syphilis, Ft. Harrison General Hospital No. 25.

The examination of drafted men showed that five men came into the army with venereal disease for every one who contracted it after he was in the army; and the one who contracted it in the army, probably, was infected in a civil community outside of military control. Venereal disease is, therefore, not a military problem or war epidemic; it is a civilian problem, taken over by military authorities for the period of war only where civil communities have failed to do their duty. The draft and physical examination of men resulted in digging underneath the sod of our civil life and showing that, out of sight in every man's town, there has been going on yearly a waste of manhood, womanhood and childhood by the ravages of these preventable diseases: diseases whose cause we know, whose germs we can see and identify through the microscope; diseases which we can locate in an individual; diseases which are transmitted in the course of a business which has no possible use or value, by carriers who have to advertise and can be easily detected.

*Read before the Officers' Medical Society, Fort Harrison General Hospital No. 25.

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Abolishing the red light district is not the end of the clean-up of the community. Boarding houses, assignation houses, cafes, dance halls, massage parlors, certain amusement parks, and "for hire" automobiles are the refuges of clandestine prostitution. They must all be watched. Legislation is needed to control these places. What is effective is not a spectacular raid now and then, but constant vigilance on the part of public officers and Citizens' Associations. Each attack on prostitution, by driving it more and more to cover, reduces the number of individual exposures to venereal diseases. Such a program of suppression often causes some sentimental or ignorant persons to rise up and say, "You are fanatical," "You are hounding the poor unfortunate prostitute," or "The lid ought to be tipped up a little so that everybody can have a good time and so that business will be better." These are absurdities. Prostitutes themselves, after they have had a glimpse of decent life in a detention house, say that "There is no greater wrong you can do a girl than to allow her to remain a prostitute."

Only in trashy novels and "movies" is the prostitute's life a rosy one. During my practice I have had the opportunity to come into contact with a great many of them. In reality, to quote her own words, "It is hell." What kind of good time do you create for recreation-loving men and women by "tipping the lid?" It may be a gay time for the night, perhaps the morning after, and months later of disaster and disease. An open town means better business for some doctors and hospitals and undertakers. It means prosperity for the pimp and landlords who live on the earnings of these women. But for legitimate business it means higher taxes, lowered efficiency, less buying power, and an infinitely poorer community. Finally, all prostitutes are diseased and should be isolated. What we need is well-equipped detention houses for the prostitutes and then give them a chance to become better women where their health may be repaired and they may be given a chance to learn a useful occupation—it is much better than to put them in jail or pest houses.

Education forms a very important part. The State and City Boards of Health will gladly furnish pamphlets that these unfortunate women may read; also books on sex education and motion pictures are good things and help to play a very important part. The man must

also be made to show his false position. Clinics for free diagnosis should be well established. The druggists are playing a very important part in the cure of venereal disease and much praise should be given the drug stores. They are refusing to sell the patients patent medicines and referring them to the doctors. The drug stores are not carrying in their stock "Knox-it" and other such patent drugs. The law has not made it a crime to be infected with venereal disease, but it does require persons infected to take treatment from a reputable physician and be reported by number to the State Board of Health. Every precaution should be taken to prevent the spread of this disease and to give the public a square deal. If a person is spreading the disease, the law then requires the name of such person to be reported. Most cases of venereal disease in the army were brought in from civil life and the army played a great part in their cure and in giving instructions to patients for use after their discharge.

Prostitution is considered, quite properly, immoral or sinful. But it has been attacked very little from a standpoint of epidemiology as other diseases have been attacked. During late years the medical man and social worker have accumulated much data concerning these diseases. It is estimated by some that there is a total of 2,500,000 in this country. At any time the annual number of new cases is from five to nine hundred thousand. Eighty per cent. of our women are operated on as a result of venereal disease. There are also many cases of blood, kidney and prostate infection, pus tubes in women, blindness at childbirth, including also the nervous involvement of both sexes, such as loco ataxia and paralysis. A large percentage of young men in the army were syphilitic but did not show any lesion. Later, under the strong strain of the front-line trenches, they were found useless. As these men had no acute manifestations, they were accepted in the army, but under the stress and strain of extensive military training they did not show the physical condition or development of a good American soldier. A careful examination of these men was made and they were found to have a four-plus Wassermann.

The American soldier of today is practically an American boy away from home, plus the uniform and plus the proud spirit. These young men come from all walks of life,—from the country and city alike. They come from the good, bad and indifferent homes. The army has certainly taught the young men with venereal diseases the dangers of these diseases, and those who were discharged, still having an infection, are now taking a course of treatment as a result of what they have been taught by the medical man in the army. With proper care and treatment, there is no doubt that these cases can be cured. The disease, if properly cared for, is not nearly so horrible as the word "syphilis."

I did not travel abroad during the war but, from what I can learn, there was less disease in this country among the United States soldiers than any other country, although the percentage in this country was very heavy.

In the United States, two hundred and fifty red light districts have been closed in the last ten years. One hundred and fifty of these have been closed since 1916. Think what the closing of these districts means! We consider that 96% living in such districts are diseased. The annual cost of supporting prostitution in the United States is about $628,750,000. This amount takes in the economic loss caused by venereal infection in the general population, the annual sum paid direct to prostitutes, the annual economic loss on insane, detention of prostitutes, cost of blindness due to venereal disease and, in addition to these, large expenditures for courts, police, jails, hospitals and clinics. Concerning the number of cases of venereal disease contracted before and after enlistment, I wish to repeat that before enlistment the number was five to one after enlistment.

A recent report that I have received from the Surgeon-General's office regarding the number of cases recorded in the army during the war, with the number of days lost, is as follows:

TOTAL AAMY.

Cases,	357,696
Days,	6,804,818

UNITED STATES.

Cases,	284,742
Days,	4,745,450

EUROPE.

Cases,	57,195
Days,	1,748,067

Three per cent. of the military draftees, whose examination blanks first reached the Surgeon-General's office in Washington, had a venereal disease when they reported at camp.

The record for each State follows:

State	Per Cent.
Oregon	0.59
Idaho	0.76
Utah	0.79
Washington	0.86
Montana	0.95
South Dakota	0.95
California	1.15
Wisconsin	1.21
Wyoming	1.22
New Hampshire	1.22
Nevada	1.40
Nebraska	1.53
Vermont	1.53
New Jersey	1.55
Minnesota	1.57
Connecticut	1.60
Iowa	1.63
Massachusetts	1.63
Arkansas	1.73
North Dakota	1.75
New York	1.82
Alaska	1.90
Michigan	1.95
Maine	2.00
Colorado	2.12
District of Columbia	2.14
Kansas	2.38
Illinois	2.44
Pennsylvania	2.62
Rhode Island	2.66
New Mexico	2.68
Delaware	2.78
Ohio	3.24
Maryland	3.28
Louisiana	3.32
Indiana	3.33
Arizona	3.40
Missouri	3.52
Kentucky	3.77
Tennessee	3.80
North Carolina	3.90
West Virginia	4.00
Mississippi	4.05
Oklahoma	4.50
Texas	
Georgia	5.60
South Carolina	8.04
Virginia	8.45
Alabama	8.68
Florida	8.90

This diagram plainly shows that the large proportion of venereal diseases in the army originated not in the cities near the army camps but in the home towns from whence the men came and the cities through which they passed on the way to camp. The amount of venereal diseases contracted by the men after putting on uniform, when they were under military regulations, is astonishingly small.

Let us now think of the war's end. Many of the war buildings, war jobs and institutions have gone into scrap, but every item in the program of venereal disease control is as necessary to successful peace as to successful war. Don't scrap your patriotism and community spirit.

From the number of men examined during the war we certainly found out that a great number were not properly treated. It is quite true that syphilis itself is not a fatal disease, but it is certainly true that it does shorten human life and its many complications show a great increase in the death rate. It is a disease whose unfortunate influences may extend to the innocent as well as to the guilty, and it is also seen in high society as well as in the lower classes. Experience does not show that this disease is less frequent at the present date since we have abolished the red light district, nor is the disease less frequent than in former years, even though there are many new discoveries for its cure. We have noted many death certificates signed as a result of tuberculosis, loco ataxia, paralysis, insanity, aneurism, cerebral hemorrhage, but, had we gone deeper into the history of these cases, we would have found the direct cause was syphilis. When an examiner finds a prostitute infected with such disease, she should be isolated and there remain until pronounced cured by her physician. I believe that public opinion will compel compulsory treatment. I believe in true prophylaxis is to be found mainly the education in the enlightment of the public and the ignorant on matters of this subject. They are beginning to realize that this disease and insanity are far too numerous. They have learned that heredity plays a very important part in human affairs. All over the country forces are uniting and concentrating their attention upon certain questions. One of these is the protection of the home. View the marriage relation from the standpoint of the offspring, wife, home and public health, is there no necessity for further safeguarding the most sacred of all human relations? Shall we consider everyone competent to marry who meets the mental requirements? Shall the syphilitic marry, destroying the health and happiness and the life of one he has sworn to protect, and to bring into this world a deformed, defective and deficient offspring? Shall the victim of gonorrhea marry, put out the eyes of his child, destroy the mother's health and bring her to the operating table, as we so often note?

There are those who will not believe that the existing conditions warrant any attempt to further limit marriage or guard the marriage relation. There are those who believe that the wife must take her chances. There

are those who seem to consider that the unborn child has no implied rights to a good inheritance. There are those who think that the State has no vital interest in the physical and mental efficiency of its citizenship. There should be no peace with prostitution, no truce for the tenderloin, and no armistice with venereal disease.

106 *West Grace Street.*

ACUTE APPENDICITIS—ACUTE SALPINGITIS—ACUTE PYELITIS DIFFERENTIAL DIAGNOSIS.

By FRANK D. WORTHINGTON, M. D., Charlotte, N. C.

The writer expects to introduce nothing new on this subject as it has been fully dealt with innumerable times but, since it is a problem that the general practitioner as well as the surgeon frequently confronts and since the treatment of the first is radical and the others conservative, perhaps it would not be amiss to refresh our minds on the subject from time to time.

It is a well recognized principle now that, as soon as a troublesome appendix is diagnosed, its removal is strongly indicated. For the woman an early diagnosis is not only important at all times but on some occasions almost vital.

On the other hand, acute salpingitis is best treated conservatively and, where the condition is found on exploration when an acute appendix has been suspected, the value of drainage is doubtful and a secondary operation is almost assured.

Acute pyelitis assuredly is not benefited by operation and, to a patient already suffering from infection, the sequelae and discomforts of an operation are added. These few facts alone are sufficient to make the differential diagnosis of importance and we will attempt to give some of the points significant in this differentiation.

1. *Race.*—Appendicitis must be much more strongly considered in the white than in the colored. The burden of proof is on the man who says a colored woman has appendicitis in view of our knowledge of the frequency of gonorrhoeal infection in that race.

Pyelitis may occur in both with equal frequency.

2. *Age.*—This point is of not so much benefit. Both acute salpingitis and acute pyelitis are more common in the child-bearing age than at any other time. On the other hand, acute appendicitis also is common at this time but is a little more frequent in the early years of this period. In those under the age of puberty, both appendicitis and pyelitis are apt to occur but the appendix is the more frequent offending organ. In those beyond the menopause, appendicitis and acute salpingitis are rare. Pyelitis must be strongly considered.

3. *Marital State.*—We must give the benefit of the doubt to the unmarried woman where acute salpingitis is suspected although it must not be lost sight of. Certainly acute appendicitis is the most frequent of the three conditions. When the patient is married, the condition of the husband's health must be considered and pregnancy be confirmed or ruled out. With pregnancy, acute pyelitis is common and acute salpingitis not rare. Attempts at producing abortion frequently lead to salpingitis and the history is hard to obtain. Careful examination of the pelvis usually confirms suspicion in these cases. A bloody discharge with soft patulous cervix and fundus slightly enlarged are usually found. The adnexae may or may not be considered pathological as will be shown later. Appendicitis occurs during pregnancy but not so frequently as at other times. However, during this time it often runs a much more rapid course and for this reason an early diagnosis is most important. During the early months, the operation can usually be done without disturbing the uterus and, if the operator uses proper care and skill, abortion is rare. At this time the disease also is not fulminating. On the other hand, during the latter months of pregnancy the large fundus makes appendectomy more difficult, the course is fulminating, peritonitis develops rapidly, and the condition can be handled unsatisfactorily by drainage. Following this the onset of labor is almost certain and the cervix usually dilates without any pain to the patient, the first hint of the condition being a rupture of the membranes or a bulging perineum. The child is usually dead and the death of the mother is almost certain. Early diagnosis and immediate operation are therefore most important in appendicular trouble with pregnancy.

4. *History.*—Too much care cannot be taken in obtaining a history in any acute abdomi-

*Read at the meeting of the Medical Society of the State of North Carolina, in Winston-Salem, April 1922.

nal trouble and, when the differential diagnosis must be made between the three conditions taken up in this paper, the history is often the leading clue. Too often this is neglected.

Reviewing first appendicitis: There have probably been previous attacks and vague digestive disturbances. An appendix seldom becomes very acute, the first time it is noticed. The onset is insidious and vague at first. Pain is an ever-present symptom and is usually at first diffuse in character, later becoming localized over the appendix region. There is usually at first pain in the epigastrium and such an authority as Dr. J. M. T. Finney states that he always doubts the diagnosis of acute appendictis if there is no history of general abdominal pain and particularly epigastric pain in the beginning of the attack.

As the attack progresses, pain becomes more localized and frequently the patient can put one finger on the painful sore spot and definitely locate McBurney's point. Nausea is almost constant and the same may be said of vomiting: the latter is seldom persistent. Constipation is a more frequent complaint than diarrhoea.

In acute salpingitis there may or may not be previous history of menstrual disturbances and pain in the pelvis. The possibility of recent infection is to be considered.

The onset is more abrupt than in appendicitis and may be ushered in with a chill. The pain complained of is usually colicky in character and at all tmes confined to the lower abdomen. As the condition progresses, the patient complains definitely of pain in the pelvic region, usually bilateral. When told to point to the most painful spot, she puts her hand all over the lower abdomen and, if she does localize on the right side, the region is usually below McBurney's point. Nausea and vomiting may be present but this is not usual. It is rather unusual.

In pyelitis, previous history is very important. Again, the presence of a pregnancy is important because of the frequency of pyelitis as a complication. Usually a history of urinary disturbances such as dysuria and polyuria can be obtained, but this is not constant. The onset of acute illness is abrupt and often associated with a chill. Nausea is frequent and vomiting not uncommon. Pain is often entirely absent but at times may be as severe as that of a typical renal colic. The pain is more apt to be dull in character and confined to the lumbar region. Its presence on the left side is a great help in making a differential diagnosis but pyelitis is more frequent on the right.

5. *The physical findings* are most important and no detail should be overlooked. Because of the frquency of other conditions outside the abdomen producing symptoms in that region, the general survey of throat, lungs, etc., should be routine. Coming to the more important examination, we will take up first the question of pulse, temperature and respiration, urine and leucocytes.

(a) In acute appendicitis the temperature is elevated but not markedly. Seldom is a temperature over 101 seen with an appendix unless peritonitis has developed. This is not true of pyelitis where the temperature may reach the highest limits, nor is it true of salpingitis where it usually will at some time during the day go quite high.

(b) Elevation of pulse with appendicitis is common and may be more significant than temperature. The pulse in pyelitis is relatively slow compared to the temperature. In acute salpingitis it is elevated with the temperature.

(c) Respirations are more limited with appendicitis than with other conditions and may be elevated for this reason. An extensive pelvic peritonitis may also limit the respiratory excursion of the abdomen. Pyelitis has no influence in this respect.

(d) The urine examined should always be a catheterized specimen and even then is not diagnostic when most important. It is a frequent occurrence to have no pus cells or R. B. C. in the urine during an early pyelitis and almost as frequent to find a few in appendicitis and salpingitis. A large quantity of these organic sediments should arouse suspicion, at least. Ureteral catheterization is a great aid but has it disadvantages: first, it is time-consuming and, if the findings are negative, the patient has been put through an unnecessary examination: second, in my opinion it is unwise to do it during an acute flare-up of a pyelitis unless its duration is for a number of days without signs of subsiding.

(e) The leucocyte count is an aid. In acute appendicitis we do not expect a count of over 20,000 unless pus is present. In acute pyelitis it may very from a moderate increase to a tremendous leucocytosis, depending on

the extent of ureteral obstruction and the subsequent tension of pus in the kidney pelvis. In salpingitis the count varies from slightly above normal to very high. A relative polymorphonuclear increase is present at all times.

(f) The general appearance of the patient is helpful. The patient with acute appendicitis is the most quiet of the three and protects herself, particularly the abdomen, in every way possible. The pyelitis case may be restless and is usually flushed. She may feel quite well. The salpingitis case does not look as sick as temperature, etc., would indicate.

(g) On abdominal examination, the first things noticed are the extent of respiratory movement and the amount of distention. The former has been taken up. As to the latter, general distention is most common in the woman with salpingitis. It is not rare with pyelitis.

On palpation the tenderness which may or may not be found with pyelitis is over the kidney affected and in the lumbar region. To me the tenderness obtained on deep palpation of a kidney is not very significant. There is slight if any muscle spasm. In appendicitis the tenderness and muscle spasm are pretty well localized over McBurney's point and the former can frequently be indicated with one finger. If there is a peritonitis, of course tenderness and muscle spasm are diffuse, but even in these cases sudden pressure or release of pressure on the opposite side of the abdomen will cause referred pain over the appendix. In salpingitis, the tenderness is usually just above the pubis, bilateral, but more pronounced on one side. The upper abdomen is markedly free from tenderness and muscle spasm anywhere is not extreme.

Pelvic examination may be misleading. A bulging cul de sac or easily palpable enlarged tubes are almost diagnostic but they are often absent and the only thing to substantiate our diagnosis of acute salpingitis is perhaps an adherent retroflexed uterus and adherent ovaries with possibly a little thickening of the adnexae.

In conclusion, if I have at all given the true findings, it is evident that the paths for error are numerous and the differential points fine. It is only by paying strict attention to all of them that we avoid mistakes and even then we will make them. After all, the points in evidence for each is, in our mind, that we must frequently, in the final analysis, resort to our own "feeling" in the matter. It is that faculty which distinguishes the extraordinary surgeon from the average and is in part inborn and in part cultivated, the ablest teacher being our mistakes.

THE RELATION OF THE GENERAL PRACTITIONER TO VENEREAL DISEASES.*

By JAMES A. KEIGER, M. D., Greensboro, N. C.

For the past five years we have heard and read much about the venereal diseases. We have been told that gonorrhea and syphilis are more prevalent than any other infectious disease, except measles; that probably fifty per cent. of the abdominal operations on women result from gonococcal infection usually contracted innocently; that a large percentage of the blindness in children is traceable to infected mothers; that still-births and early deaths are due to syphilis. These facts, coupled with the loss in physical power on the part of those who are infected, place the venereal diseases in the front rank of medical problems.

Considering the wide-spread prevalence of these infections, I believe that every medical man, specialist, as well as general practitioner, is vitally interested. For there is no field of medicine that does not at some time or other encounter a syphilitic or gonococcal infected patient. If, then, the various specialists meet with these cases, does not the general practitioner meet with them more so, since he is a combination of them all?

The analogy is not perfect, but I believe we might look upon the general medical man as the clearing station for all the casualties. For, to him the wife comes when she has some "female" or bladder trouble; to him the mother brings her children when they are not doing well; and, to him the boy or young man reluctantly reports when he realizes that he has been indiscreet. Thus we see that the physician has the first opportunity to detect a gonorrheal or syphilitic infection in the wife, father, mother, or children.

Having made the diagnosis, and there is no reason why he cannot, for the laboratory of the State Health Department is always ready to aid, he must decide which cases he can and will properly treat, and which he will refer. I use the term "properly" advisedly. For per-

*Read at the meeting of the Medical Society of the State of North Carolina, in Winston-Salem, April 1922.

sons infected with gonorrhea or syphilis are seriously ill and deserve to be treated with the same care and skill that is given to the typhoid, pneumonia or diphtheria patient.

To discuss in detail any of the various plans of treatment would take entirely too much time, so I shall make only a few general remarks, relative thereto: first, the general practitioner must, at least, treat the acute cases, for there are not specialists enough in the State to handle them if they are all referred. But let me add that, unless he is willing to examine his patients, he should let them go to the druggist and quack as they have been doing in the past; second, refer the chronic cases to the specialist and do not tell them that they are incurable; third, do not be in a hurry to treat ulcerations on the genitalia with caustics, but rather consider all such cases as syphilitic until proved otherwise by the microscope or other laboratory tests; fourth, do not tell a syphilitic that three or six "shots" is sufficient, for, in the light of our present knowledge, we do not think it is, in fact, know that it is not in the vast majority of cases.

What, then, is the relation of the general practitioner to venereal disease? I think it can be answered by saying that it is the same as that towards tuberculosis, cancer, malaria, etc. And the solution rests on co-operation of all the medical men, giving their best efforts to diagnose early and then treat with skill and care.

McAdoo Building.

HYDROPS DYSPNEA NOT RELIEVED BY ASPIRATION.

A Report of Case.

By ALEXANDER G. BROWN, JR., M. D., Richmond, Va.

PATIENT: Aet. 68, white, male, banker.

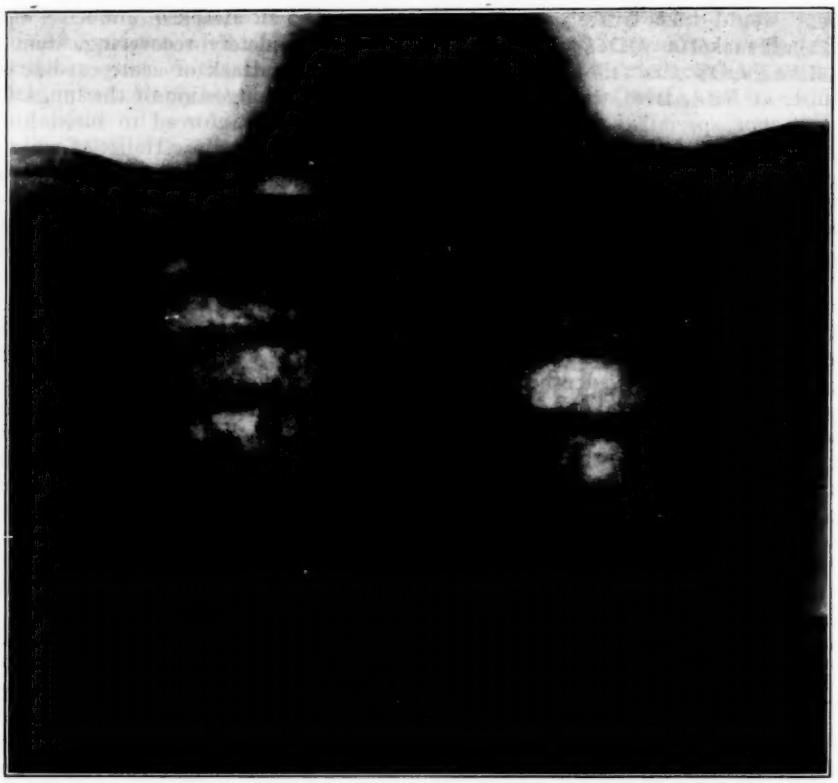
Had never been sick in bed, but had been a mild diabetic for twenty years. By intelligent management of his diet, the glycosuria was controlled and his weight was maintained below the normal for his height. For months prior to my examination, he had been having attacks of tachycardia and arrhythmia. Apparently these attacks were related directly to two factors:—(1) exercise and business excitement, and (2) stomach dysfunction. Frequently the heart attacks occurred in the morning before breakfast. This was attributable to over-indulgence at the evening meal the preceding day, and a failure of the stomach to empty its contents promptly. While examining this patient, a heart attack was produced by deep pressure in the epigastrium:—a regular-heart became arrhythmic and rapid.

The patient went to Europe on a business trip. Had an attack of influenza in London. Before completely recovering, went to Paris and had an attack of acute cardiac dilatation and passive congestion of the lungs. His Paris physicians were forced to bleed him and to use intravenous injections of digitalis and intramuscular injections of camphor in oil. After a stormy time he improved and returned to America and, on December 24th, 1921, was seen again by me, a few hours after his arrival in Richmond.

The heart rate was 115 per minute. There were intermissions in the systoles, and fibrillating auricles and pulmonary edema. The patient was ordered to bed. For six weeks, under large doses of digitalis, the heart seemed to improve in rate and rhythmic regularity, but apparently never diminished in diameter. After six weeks the respiration began to show an increased rate. For a while, it was difficult to say that there was hydrops in the pleural cavity but, as the shortness of breath increased, it was easy to make out the accumulation of serous exudation in the right pleural sac. An aspiration was considered but deferred until the accumulation became somewhat oppressive. February 21, 1922, an aspiration was done and 32 ounces of serous fluid taken from right sac. This relieved the patient but, although the heart was digitalized, it did not improve. He was repeatedly tapped on the right side and, toward the end of his illness, twice on the left side. Toward the termination of his illness, the air cells apparently failed to reinflate and he died with practically no fluid in either sac, but suffering with great dyspnea, resulting from atelectasis of both lungs and, at the end, auricular flutter.

This condition of atelectasis, meaning incomplete expansion of the lungs, is usually brought about by causes interfering with the inspiratory act, by obstruction. Any enlargement of the membranes or structures in the vestibule of the pulmonary passage may be a cause and, also, any inflammatory secretion, associated with bronchitis, broncho-pneumonia and whooping cough, or foreign body, may produce atelectasis. In addition, one sees air-less areas in patients about to die when the respira-

tory muscles fail to function, resulting in collapse. But in this case this atelectatic condition was due to pressure from without the lungs. The compression of the lungs from both lungs, although the fluid was drawn promptly, there was marked air hunger which eventually, together with cardiac fatigue, brought the patient to a fatal termination.



dropsical accumulation in the pleural cavity was too great in this case of long standing diabetes. As a result of this air-less state in He died by respiratory failure; the heart pulsations were evident after respiration failed.*

Stuart Circle Hospital.

*Reference: Diseases of the Chest, etc., Norris Landis.

Public Health

Notes From the State Board of Health Laboratory.

INTESTINAL DISEASES: A new outfit is now ready for distribution for fecal specimens in suspected cases of typhoid fever, dysentery, etc. This outfit includes a small bottle of 30% glycerine for receiving the specimen. The use of the glycerine does not inhibit the organisms sought for but does inhibit somewhat the growth of other bacteria. Fecal specimens submitted in this way, stand shipment quite well and the percentage of positive findings should be materially increased.

We have also been studying the use of certain new culture media and have improved the technique of examining these specimens. Last year several typhoid carriers were found and, with increasing vigilance on the part of the physicians, we may expect to locate many more this summer. Now that many of the "larger" factors in the spread of typhoid fever have been removed, much more attention must be paid to the carrier. Write for our new outfit.

MAIL SERVICE: The laboratory now has a special postoffice box, and we are doing all that we can to speed up our service. Again we urge the doctors to address all communica-

tions to the LABORATORY and not just to the HEALTH DEPARTMENT.

AUBREY H. STRAUS,
Director of Laboratory.

Proceedings of Societies

The South Piedmont Medical Society

Held its regular semi-annual meeting at South Boston, Va., April 18, under the presidency of Dr. E. Barksdale, of Lynchburg. The program included many interesting papers. In the intermission between the two sessions, supper was served at Garland Hotel. The following officers were elected: President, Dr. Geo. B. Barrow, Clarksville; vice-presidents, Drs. J. B. Lacy, Nathalie; R. P. Kelly, Lynchburg; J. J. Neal, Danville; and Ray A. Moore, Phenix; secretary-treasurer, Dr. Geo. A Stover (re-elected), South Boston. Lynchburg was selected as the next place of meeting, the date being set as November 21, 1922. The subject for general discussion at this meeting will be "Chronic Cardiac Lesions." This will have the following subdivisions and leaders:

Etiology and Symptoms, by Dr. D. P. Scott, Lynchburg;

Pathology and Diagnosis, by Dr. F. C. Rinker (honorary member), Norfolk;

Treatment and Prognosis, by Dr. T. N. Davis, Lynchburg.

The Medical Society of Virginia, Maryland and the District of Columbia

Held its Spring meeting in Warrenton, Va., May 17th, under the presidency of Dr. Stephen Harnsberger, of that place. In spite of a rainy day, the meeting was a success, and those in attendance enjoyed an "old time country dinner." The following officers were elected:—President, Dr. William L. Lewis, Kensington, Md.; vice-presidents, Drs. J. H. Ferguson, Clifton Station, Va., and E. J. Horgan, Washington, D. C.; recording secretary, Dr. Dr. Wm. T. Davis; corresponding secretary, Dr. Jos. D. Rogers; treasurer, Dr. Robert Scott Lamb, the last three being of Washington; membership committee, Drs. J. W. Bird, Sandy Spring, Md.; W. Allen Griffith, Berwyn, Md.; Hunter H. McGuire, Winchester, Va.; Arthur Hooe and Jas. A. Gannon, Washington, D. C.; and Wm. C. Welburn, Ballston, Va.

The next meeting is to be held in Washington, D. C., November 15, 1922.

The Northern Neck Medical Association

Met in semi-annual meeting at Warsaw, Va., May 25, 1922, Dr. M. C. Oldham, Lancaster, president, and Dr. R. E. Booker, Lottsburg, secretary. Besides a good attendance of the Northern Neck physicians, Drs. A. B. Hooe and G. B. Gill, of Washington, D. D., and Drs. G. B. Harrison and Mason Smith, of Fredericksburg, Va., were present and read very interesting papers.

The Association went on record as endorsing the road bond issue.

R. E. BOOKER, Secretary.

The Medical Association of the Valley of Virginia

Held its Spring meeting in Harrisonburg, May 25, Dr. C. E. Conrad, of that place, presiding. The attendance was good and the papers were interesting and instructive. It was decided to hold the next meeting at Clifton Forge, on September 28. The secretary, Dr. Alex. F. Robertson, Jr., reports 94 active members of this Association.

The Virginia Graduates Nurses' Association,

At its annual meeting in Bristol, the latter part of May, selected Richmond as its meeting place for 1923, and elected the following officers:—President, Miss L. L. Odom, of Sarah Leigh Hospital, Norfolk; vice-presidents, Miss Bettie Wingfield, Bristol, and Miss Florence Bishop, Portsmouth; treasurer, Miss Margaret Cowling, University; and secretary, Miss Heard, Richmond.

American Medical Association.

The St. Lois meeting of the American Medical Association was up to standard in every way. There was a registered attendance 5,174, only 22 of whom were from Virginia, as follows: Drs. A. L. Gray, J. Shelton Horsley, McGuire Newton, E. H. Terrell and I. J. Haynes, of Richmond; Southgate Leigh, E. C. S. Taliaferro and R. D. Glasser, of Norfolk; T. Allen Kirk, D. E. Remsberg, John O. Boyd, S. S. Gale and Jos. T. McKinney, of Roanoke; Jos. T. Buxton, L. E. Stubbs, E. M. Newsom and F. D. Willis of Newport News; L. O. Crumpler, of Danville; F. V. Fowlkes, of Burkeville; L. A. McAlpine, of Portsmouth; C. B. Bowyer, of Stonega; and T. C. Firebaugh, of Harrisonburg.

San Francisco was selected as the place of meeting for the 1923 meeting and Dr. Ray Lyman Wilbur, of Stanford University, California, was selected president-elect.

Secretary's Announcement

District Medical Societies.

In the past two and a half years I have attended the meetings of three district medical societies and three meetings of the State Society. Speaking as a former teacher, gatherings of the district societies are far superior in their educational values to those of the State society. The reason for this is not difficult to locate. Fifty men furnish an audience sufficiently large to stimulate those on the program to their utmost efforts yet sufficiently small for each one to get the maximum benefit from the reading of the paper and the following discussion. There are no extraneous matters like reports, meetings of governing bodies, politics, or laymen secretaries to break in and consume precious time. The meetings of these small organizations to advance their professional standards, to serve the interests of the public health, mean more to the people of the State than any larger meetings even of the same man. Papers read at these meeting are of an unusually high order and they provoke discussions in which a large number of the men present participate.

The organization of district societies throughout the State will greatly stimulate the professional and scientific interests of the profession and the public health.

G. H. WINFREY, Secretary-Treasurer.

The Truth About Medicine

During March the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Non-official Remedies:

Abbott Laboratories:
  Izal
  Izal Disinfectant Powder
Intra Products Co.
  Van Sterile Solution Mercury Benzoate 1 Cc.
Merrell-Soule Co.:
  Powdered Protein Milk-Merrell-Soule
Parke, Davis & Co.:
  Pertussis Vaccine
  Pneumococcus Vacine (4 Types)
  Streptococcus Vaccine Polyvalent (Scarlatina)
  Typhoid-Paratyphoid Vaccine (Prophylactic)
Seydel Manufacturing Co.:
  Benzocoine-Seydel
Winthrop Chemical Co.
  Iothion
  Iothion Oil
  Sabromin
  Sabromin Tablets 8 Grains
Acriflavine-Heyl:
Proflavine-Heyl:

These products are now marketed by the National Aneline & Chemical Co. and the Council has continued the acceptance for New and Non-official Remedies under the new firm name.

Book Announcements

Practical Infant Feeding. By LEWIS WEBB HILL, M. D., Junior Assistant Physician to the Children's Hospital, Boston; Assistant in Pediatrics, Harvard Medical School. 8vo. 483 pages, illustrated. Philadelphia and London. W. B. Saunders Company. 1922. Cloth, $5.00 net.

To have a satisfactory working knowledge of infant feeding, it is absolutely necessary one should have a fair understanding of the chemistry of metabolism. To this end, Dr. Hill has given us a book that seems to be practical without being superficial, and scientific without being tiresome.

Disclaiming allegiance to any particular "school" of infant feeding, the author has amalgamated the best points taught in this country and abroad, interpreting them through his own practical experience in the Boston Children's Hospital and private practice. Boston is probably the greatest pediatric center of America and this new book measures up to its highest standards of excellence.

The Eighteenth Amendment and the Part Played by Organized Medicine. By CHARLES TABER STOUT, New York. Mitchell Kennerley, 489 Park Avenue, New York City, Publisher, 1921. 12 mo. Cloth, 216 pages. Price, $1.50.

The Law of Vital Transfusion and the Phenomenon of Consciousness. An Account of the necessity for and Probable Origin of the Development of Sex and the Development of the Conscious State in the Evolution of the Organic World, with a Preliminary Statement of Fundamental Cosmical Principles. By CHARLES J. REED. Occidental Publishing Company. San Francisco, Cal. 74 pages, Cloth, Price, $1.50.

Vital Statistics in North Carolina.

Advance figures from the N. C. Bureau of Vital Statistics, compiled by Dr. Frank M. Register, show that during 1921 there were 59,000 more births than deaths. During the year there were 87,000 births and only 28 000 deaths reported. This gives North Carolina a birth rate of 33.4 for 1921 against a death rate of 11.6.

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B. R. TUCKER, M. D., Richmond, Va.
P. W. HOWLE, M. D., Richmond, Va.
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A. L. GRAY, M. D., Richmond, Va.
ALEX. G. BROWN, Jr., M. D., Editor.
G. H. WINFREY, Business Manager and Secretary-Treasurer.
AGNES V. EDWARDS, Editor's Assistant and Assistant Manager.

All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Journal.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

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Editorial

The New Requirements in the Medical Life.

The new requirements in medical life are those of expansion. The new hour, with all the new demands, calls for a great activity of physicians in matters of the intellectual, governmental and social life of the community. Physicians should meet the new requirements of post-war period with eagerness and with enthusiasm. Physicians of the state should feel the call to take an active part in problems and questions that are about us on every hand awaiting solution. No longer should doctors stand aside and permit others to assume full charge of problems arising in the life of the community. The medical men of counties and cities in the state should be leaders in the march of progress. The doctors of Virginia should be a potent group, trained as they are in the daily study of human-needs, for successful leadership in battle against the forces of the country that would break down the bonds of society.

The doctors of Virginia should ever bestir themselves to an active and daily interest in the city, county and state government and its agencies. The doctors of every community should cultivate an earnest purpose to be of service to their community in the effort to secure "good men" to run for public office. The strictly political doctor should be discouraged. But every encouragement should be given, by the profession, to all of the craft who for the public weal, show patriotic activity in the direction of political events. Now, is the hour; let the mind think on the country's problems; and let physicians do what they can on every side to encourage proper persons to run for offices and for representative positions in government. No matter how excellent the laws, unless the administration of the laws is in the hands of the most trustworthy and efficient, the standards of government will be in danger. So it is urged that physicians and medical men of all sorts show a lively and personal interest, as they know so well the personnel of their communities, in bringing out for office capable, trustworthy and effective candidates for office.

Respect for Law.

The hour has come in Virginia, as in the other states of the Union, when a new enthusiasm and interest should be aroused for the respect and observance of the law. On every hand one observes the evil tendencies which are brought about by laxity in public sentiment over the breaking of the law. Doctors of the state should stand for the principle of obedience to the law. They should be foremost in activities that quicken the public conscience to a stricter observance of the law, and should be ready to demand of public officials the application of the strictest vigilance in the enforcement of the law which they have sworn to observe.

The wheels of progress are obstructed in the political advancement of a state often, by the failure of the electorate to send to the legislative hall representatives of the best grade. The very life of a people is bound up in the transactions of the legislative assembly. The state's welfare may progress or it may retrograde by this token; much depends upon the vision, the intelligence and the trustworthiness of the men who formulate and pass upon legislation. This is true because the legislation enacted affects and influences the life and body of every person within the confines of the state. Now is the time to think and plan. Less than two years is before us again, before the legislature will assemble for the discussion and action on problems of Virginia. Let the doctors interest themselves in raising the standards of our representatives to the highest level of efficient statesmanship.

Good Roads.

The physicians of this state are deeply interested in good roads and no apology is of-

fered for again urging in these columns daily interest in the development of permanent highways in Virginia. In this one great need is rapt (wrapped) much of health, education, social and religious life of our people. Why must Virginia wait decades for what others get in a shorter time? For many years, since the automobile has come into the economical fabric of the nation, there has been this agitation for roads that will accommodate winter travel as well as summer use, and Virginia, last winter, was all but "mud bound" for two months. This should not be so. It was so in colonial days that for a long time during the winter months transportation over country roads could be accomplished only on horse back. Last winter, every winter, in certain sections of the state, the same conditions existed. This should not be so, and the doctors, together with the people of every community, should exhaust every possible means to arouse a public sentiment which will pull Virginia out of the mud at once and for all time.

Who pays the taxes? Is there a greater tax than that exacted by a mud road: a tax on health, life and limb; a tax on education and social and religious well being of the whole people?

Proprietary Vitamins.

The popular and scientific interest that has been aroused over the more recent studies of the food elements, which has brought forward the importance of the vitamins to health and strength, has produced a natural result in human experience. The effort to commercialize and to sell this new knowledge has taken form. On the page of the daily newspaper one sees now-a-days large and impressive advertisements declaring the usefulness of some vitamin-product. In view of this evident danger it may be well to quote the conclusions presented by Hess, Moore and Calvin* and suggest that interested readers read the article in full:—"It appears from the foregoing experiments that the process of manufacture and subsequent aging of the concentrated vitamin products have not caused as much deterioration of the antineuritic as of the antiscorbutic properties. All the products studied were very low in antiscorbutic properties and, while all of them contained water soluble B, they had a much lower potency than fresh yeast, with the possible exception of the Yeast Vitamine-Harris preparation.

"The discovery of the vitamins, their classification and their relationship to nutrition, both in health and in disease, must be considered one of the great contributions to medical science. However, the claims that one or all of the known vitamins can be prepared for dispensing in a concentrated form which will not be affected by drying, aging and oxidation are, in the light of our experimental work, open to great question.

"It is becoming more firmly fixed in the minds of leading investigators that, except to meet specific indications, as in times of famine and certain economic upheavals, such as war, the best method of obtaining sufficient vitamins is through a proper selection of foods. Vitamins should be obtained from the dairy, the grocery and the market, not from the drug store."

*J. A. M. A., May 13, 1922, Vol. 78, No. 19, page 1441.

Syphilis of the Lungs.

This condition, once thought to be very rare, is now-a-days more commonly recognized. The known frequency of pulmonary tuberculosis, together with the similarity of the physical signs of some forms of tuberculosis and syphilis of the lungs, is the probable explanation of the fact that syphilis of the lungs is not oftener differentiated. Visceral syphilis has, however, come more to the front in recent years, because of the more accurate history-taking, the Wassermann test, and x-ray studies.

Syphilis of the lungs is difficult to diagnose. The known presence of syphilis, by the Wassermann test, physical signs and the history, together with pulmonary signs of pathology will hardly be sufficient evidence to invariably conclude that luetic pathology alone is responsible, or that tuberculosis of the lungs is not present in a syphilitic patient. Consolidation of areas of lungs and the auscultation of inflammatory secretion in adjacent regions is one form of its pathology. This is shown in the apices of lungs or may appear along the roots. It is a rather fixed opinion, that the apices of lungs are rarely involved, but some have observed signs pointing to this condition. This is particularly true when there is a mixed infection of tuberculosis and syphilis.

Diagnosis of syphilis of the lungs always presents rather uniform difficulties, because of the fact that many of the symptoms and signs suggest the more common pulmonary

tuberculosis. The cough, some fever, some loss of weight, expectoration, in a patient, continuing for a long period of time, naturally suggests tuberculosis. But repeated examinations of the sputum, absence of typical physical findings, unfavorable x-ray examination, and the positive Wassermann examination, may point out the real diagnosis.

News Notes

The Medical College of Virginia Finals

Were of more than usual interest this year, owing to the large attendance of the alumni and the entertaining in their honor. More than 300 alumni registered attendance. An entertainment by the student body was given on the evening of May 27th, the affair being a burlesque on the faculty and the Richmond Academy of Medicine and Surgery. Acrobatic and comic features were also introduced. The following day the baccalaureate sermon was preached by Dr. H. D. C. Maclachlan, of Seventh Street Christian Church. The alumni presided over by Dr. H. U. Stephenson, of Toano, Va., held several meetings and the future welfare of the school was the all-absorbing theme of discussion. Many plans were advocated, some of which will receive further consideration. Dr. Manfred Call, Richmond, was elected president of the Alumni Association for the coming year, and Dr. John Bell Williams, also of Richmond, secretary.

On Monday afternoon, there was a street parade of the faculty, alumni, students, and nurses of the hospitals under the supervision of the Medical College of Virginia. This was followed by a class reunion and a meeting of the alumni and reunion dinner. Commencement exercises were held at the Strand Theatre on Tuesday evening, the 30th, and these were followed by a dance at Jefferson Hotel. Dr. J. M. T. Finney, of Johns Hopkins Hospital, Baltimore, was the commencement speaker, his subject being "Opportunities and Responsibilities of the Doctor." The president, Dr. Stuart McGuire, made the annual report of the school, after which diploma were awarded to graduates by Dr. E. C. L. Miller, Dr. J. A. C. Hoggan, and Mr. W. F. Rudd, deans, respectively, of the schools of medicine, dentistry and pharmacy. There were twenty-seven graduates in the school of medicine, eighteen in the school of dentistry, twenty from the school of pharmacy, and eleven from the nurses' training department. Mr. Frederic B. Morlock, superintendent of the hospital division, presented diplomas to the latter.

The following hospital appointments were announced:—

Memorial Hospital, Richmond—Drs. Mary B. Baughman, E. P. Bray, and E. J. Kane, of Richmond, W. R. Gardner, Star, Va., R. H. Harrington, Major, Va., and undergraduate W. R. Payne.

City Home Hospital, Richmond—Undergraduates J. T. Graham, H. L. Gwynn and R. P. Hawkins.

City Jail Hospital, Richmond—Undergraduate B. J. Atkinson.

Grace Hospital, Richmond—Undergraduates J. G. Davis, Jr., and F. E. Handy.

Johnston-Willis Sanatorium, Richmond—Dr. J. B. Woods, Jr., Richmond, and undergraduate R. S. Kyle.

Penintentiary Hospital, Richmond—Undergraduate W. P. Bittinger.

Retreat for the Sick, Richmond—Drs. Joseph Coates and W. E. Dickerson, Danville, Va., and P. G. Fox, Drewryville, Va.

St. Luke's Hospital, Richmond—Drs. J. B. Loving, Culpeper, Va., and C. D. Nofsinger, Fincastle, Va.

Sheltering Arms Hospital, Richmond—Dr. Margaret Nolting, Richmond, and undergraduates J. N. Robertson and A. A. Wilson.

Soldiers' Home Hospital, Richmond—Undergraduates H. H. Menzies.

Stuart Circle Hospital, Richmond—Drs. J. E. Taylor, Chase City, Va., B. P. Seward, Isle of Wight, Va., and undergraduate H. L. Horton.

Virginia Home for Incurables, Richmond—Undergraduate S. P. Hileman.

George Ben Johnston Memorial Hospital, Abingdon, Va.—Undergraduate R. H. Edwards.

St. Vincent's Hospital, Norfolk, Va.—Dr. L. L. Sawyer, Jr., Norfolk, Va.

Central State Hospital, Petersburg, Va.—Undergraduate A. B. Sloan.

Mt. Regis Sanatorium, Salem, Va.—Undergraduate Fielding Combs.

Western State Hospital, Staunton, Va.—Dr. M. H. Harris, Pendleton, Va.

XUM

Providence Hospital, Washington, D. C.—Dr. C. M. Caravati, Richmond, Va.

In addition to the seventeen named for hospital appointments, there were ten graduates in the department of medicine, as follows:—Drs. R. F. Cline, Stephens City, Va.; W. J. Crawford, La Grange, N. C.; R. H. Isaacs, Baltimore, Md.; W. J. Ozlin, Dundas, Va.; G. W. Parson, Stony Creek, Va.; C. F. Ridge, Edgar, N. C.; L. O. Snead, Virgilina, Va.; C. W. Tucker, Norfolk, Va.; P. F. Whitaker Kinston, N. C.; and T. M. Winn, Palmyra, Va.

The National Tuberculosis Association

Sometime ago began a new and important phase of its work in an attempt to increase the quantity and character of research work in problems related to its own field in the United States. For this purpose it appropriated $20,000 and appointed a small committee to expend these funds to the greatest advantage. This committee decided that the best use of these funds would be in assisting researches already under way that held the greatest promise of increasing the practical knowledge of physicians dealing with tuberculosis. The value of Roentgenography in determining the presence of pulmonary disease having long been recognized, one of the researches was an effort to establish the x-ray and clinical findings in the chest of the normal child up to ten years of age. For this problem, the following roentgenologists and clinicians were appointed:—Drs. H. K. Pancoast and H. R. M. Landis, of the University of Pennsylvania; Drs. F. H. Baetjer and C. R. Austrian, of Johns Hopkins University; and Drs. H. K. Dunham and K. D. Blackfan, of the University of Cincinnati. These physicians have now sumbitted their reports to the Association and may be of interest to many.

The Medical Society of the State of North Carolina,

At its meeting in Winston-Salem, in April, had a registered attendance of 542. The program included 67 papers and an enthusiastic meeting was held, Dr. H. A. Royster, of Raleigh, presiding. It was decided to hold the 1923 meeting in Asheville, and the following officers were elected:—President, Dr. John Wesley Long, Greensboro; vice-presidents, Drs. Frederick M. Hanes, Winston-Salem; Thos. C. Johnson, Wilmington; and Benj. L. Long, Hamilton; secretary-treasurer, Dr. Lewis B. McBrayer (re-elected), Sanatorium.

The following were named as delegates to the Norfolk meeting of the Medical Society of Virginia:—Drs. B. C. Willis, Rocky Mount; S. N. Harrell, Tarboro; E. P. Gray, Winston-Salem; J. W. Tankersley, Greensboro; and B. C. Nalle, Charlotte.

The N. C. Public Health Association,

Held in Winston-Salem, just prior to the meeting of the State Society, elected Dr. Alexander C. Bulla, Winston-Salem, president, and Dr. Frank M. Register, Raleigh, secretary.

Married.

Dr. Robert Graham Wiatt, University, Va., and Miss Marian C. Myers, formerly of New York, but recently of Blue Ridge Sanatorium, Charlottesville, Va., May 5.

Dr. Willard Strickland, Wendell, N. C., and Miss Cleo Mariner, Pocomoke, Md., May 10, at the Nurses' Home of Stuart Circle Hospital, Richmond. Dr. Strickland graduated from Medical College of Virginia in 1919, after which he served an internship at Virginia Hospital, this city.

Dr. John Terrell Scott, of Lynchburg, Va., and Miss Vivian White, of Denver, Colorado, June 14. The groom received his diploma in medicine from the University of Colorado, the same day.

Dr. John W. Devine

Has returned to his home in Lynchburg, Va., after attending clinics in Chicago and Rochester, Minn.

Dr. Fayette A. Sinclair,

Newport News, Va., as the Knight of Warwick, won the second place among the successful knights in the tournament staged during the Virginia Historical Pageant in Richmond.

Dr. W. Reid Putney,

Of Littleton, N. C., has been a recent visitor at the home of his father-in-law, Dr. Geo. C. Callaway, at Norwood, Va.

Dr. C. S. Lawrence

Has been elected president of the Lion's Club, recently organized in Winston-Salem, N. C.

Dr. J. Allison Hodges,

Richmond, Va., by invitation delivered an address before Warwick County Medical Society, the middle of May.

Members of Raven Society, U. Va.

The following members of the third year medical class of the University of Virginia have been elected to membership in the Raven Society, one of the honorary scholarship organizations of the University: Monroe Jacob Epting, Jr., Savannah, Ga.; Robt. Battaile Hiden, Pungoteague, Va.; Vincent William Archer, Black Mountain, N. C.; and Caldwell Jackson Stuart, Washington, Va.

Dr. Herman Pifer

Has returned to his duties at St. Luke's Hospital, Richmond, after a short visit to his home near Strasburg, Va.

Dr. C. C. Hudson,

Health officer of Richmond, Va., recently spoke on the subject of tuberculosis before the student body of Randolph Macon College, Ashland, Va.

Dr. W. Armistead Gills,

Who has been attached to the U. S. naval station at Guam, has been ordered home, and is expected in Richmond about the middle of June.

Dr. R. A. Martin,

City Health officer of Petersburg, Va., in May attended the National Conference of State Health Officers held in Washington.

Hill Top Sanatorium,

Danville, Va., was formally opened Sunday afternoon, June the 4th. The building has a capacity of thirty-four patients. It is constructed so as to provide for bed patients under hospital conditions, while ambulant patients sleep on open front pavilions.

While designed primarily for tuberculosis patients of Danville and Schoolfield, the institution is in position to care for a limited number of outside patients at moderate rates.

Officers in National Associations.

In the large number of national associations holding their annual meetings, in Washington, D. C., early in May, we note the following elections for the coming year.

The American Dermatological Association elected Dr. Howard Morrow, San Francisco, president, and Dr. U. J. Wile, Ann Arbor, Mich., secretary-treasurer.

The American Gynecological Society elected Dr. John A. Sampson, Albany, N. Y., president, and Dr. Arthur H. Curtis, Chicago, secretary.

The Association of American Physicians elected Dr. James B. Herrick, Chicago, president, and Dr. Thos. McCrae, Philadelphia, secretary.

The American Pediatric Society elected Dr. L. Emmett Holt, New York, president, and Dr. Howard Childs Carpenter, Philadelphia, secretary.

The National Tuberculosis Association elected Dr. Lawrason Brown, Saranac Lake, N. Y., president, and Dr. George M. Kober, Washington, D. C., secretary.

The American Laryngological Association elected Dr. Emil Mayer, New York City, president, and Dr. George M. Coates, Philadelphia, secretary.

The American Society of Tropical Medicine elected Dr. George Dock, St. Louis, president and Dr. Brayton H. Ransom, Washington, D. C., secretary-treasurer.

The American Ophthalmological Society elected Dr. William H. Wilmer, Washington, D. C., president, and Dr. Thomas B. Holloway, Philadelphia, secretary-treasurer.

The American Association of Genito-Urinary Surgeons elected Dr. William E. Lower, Cleveland, and Dr. Henry G. Bugbee, New York City, secretary-treasurer.

Dr. Kemp P. B. Bonner,

Morehead City, N. C., has been appointed director of the bureau of maternity and infant hygiene in the State Board of Health.

The West Virginia State Medical Association,

At its annual meeting last month, elected Dr. John N. Simpson, of Morgantown, president; Drs. R. J. Wilkinson, Huntington; Henry H. Hall, Wheeling; and Walter E. Vest, Huntington, vice-presidents; and re-elected Dr. Robt. A. Ashworth, of Moundsville, secretary-treasurer. The meeting will be held next year at Beckley.

The Citizens Military Training Camps,

In the Third Corps Area, will open July 27th and continue through August 26th, 1922. During this time, young men who choose to attend will be given free military training for

a period of 30 days, without any expense whatsoever. We give herewith a list of the camps in this district and the branch of the service in which training will be given at each place:—

Infantry, Cavalry, and Medical Corps, Camp Meade, Md.

Coast Artillery Corps, Ft. Monroe, Va.

Air Service, Langley Field, Va.

Engineer Corps, Camp Humphreys, Va.

Motor Transportation, Camp Holabird, Md.

Full information may be obtained by addressing U. S. Army Recruiting Station, 1016 East Main Street, Richmond, Va.

Dr. R. H. Woolling,

Pulaski, Va., was with a party of Rotarians who left the latter part of May, to attend the international meeting of Rotary Clubs, in Los Angeles. Mrs. Wooling accompanied him.

Norfolk Chapter, M. C. V. Alumni.

Alumni of the Medical College of Virginia, residing in Norfolk, Berkley, Portsmouth, Suffolk, and surrounding territory, recently convened in Norfolk and decided to hold meetings semi-annually, in May and November. Dr. E. C. S. Taliaferro, Norfolk, was elected president; Dr. Jos. D. Collins (medical), Portsmouth, Dr. D. A. Dudley (dental), and Marcellus Miller (pharmacal) vice-presidents; and Dr. W. M. Chandler, secretary. A feature of the meeting was an address by Dr. W. L. Harris, Norfolk, who is a member of the Board of Visitors of the Medical College of Virginia. After the meeting, supper was enjoyed by those present.

King's Mountain Memorial Hospital.

Work has been started on this new hospital in Bristol, Va., and it is expected that the building will be completed about the middle of next December. It will have sixty beds and three complete operating rooms. It is to cost about $150,000.

Dr. R. Lloyd Williams

Norfolk, Va., has been appointed chairman of the entertainment committee and will have charge of exhibits, for the fifty-third annual meeting of the Medical Society of Virginia, which is to meet in that city in the fall.

Dr. William B. Porter,

Who has been connected with the Medical Department of Stuart Circle Hospital, Richmond, has moved to Roanoke, Va., and assumed charge of the Medical Department of Lewis-Gale Hospital.

Dr. Porter graduated from the former University College of Medicine, this city, in 1911 and, after an internship at Hygeia Hospital, Richmond, located in this city. He served during the World War in Base Hospital No. 45 (McGuire Unit), with the rank of major.

Dr. R. D. Glasser,

Norfolk, Va., following the A. M. A. meeting in St. Louis, went to Rochester, Minn., to attend for several weeks, the Mayo Clinics in the section on Operative Gynecology.

Dr. B. C. Keister,

Formerly of Roanoke, Va., but more recently of Americus, Ga., took a post-graduate course on Internal Medicine and Pediatrics at Washington University, St. Louis. After the A. M. A. meeting, he went to El Paso, Texas, where he expected to spend some time.

Dr. and Mrs. Alexander G. Brown, Jr.,

Of this city, have returned from Washington, D. C., where they went to attend the graduation exercises of their daughter, Miss Margaret Upshur Brown, at the National Cathedral School.

Dr. M. C. Sycle,

Richmond, attended the meeting of the Board of Visitors of the Virginia School for Deaf, Dumb and Blind, in Staunton, this month.

U. Va. Hospital to Have New Wing.

A wing for orthopedic work is to be added to the University of Virginia Hospital, the cost to be $60,000.

The International Congress of Ophthalmology,

Which met in Washington, D. C., recently, elected Dr. Geo. E. de Schweinitz and Dr. Luther C. Peter, both of Philadelphia, president and secretary, respectively.

The American Proctologic Society,

At its meeting in St. Louis, elected Dr. E. H. Terrell, of Richmond, Va., president for the coming year, and re-elected Dr. Ralph W. Jackson, of Fall River, Mass., secretary-treasurer.

Park View Hospital,

Rocky Mount, N. C., owned by Drs. E. S. Boice and B. C. Willis, formerly of Richmond, has recently completed an annex of fifteen

rooms, installed a refrigerating plant, etc., at an expense of over $20,000.

Dr. E. L. Flanagan,

Richmond, Va., who for the past two years has been engaged in X-ray work in this city, has gone to New York City, where he will spend several months studying Roentgen ray diagnosis and treatment at the various hospitals and clinics.

Dr. and Mrs. Harry D. Howe,

Hampton, Va., left the latter part of May for Dobb's Ferry, N. Y., to attend the graduation of their daughter, who has been at school there.

The American Laryngological, Rhinological & Otological Society,

At its recent meeting elected Dr. Dunbar Roy, of Atlanta, Ga., president, and re-elected Dr. Wm. H. Haskin, of New York City, secretary.

Dr. P. G. Hundley,

Who has been practising for sometime at Shenandoah, Va., is now located at 1358 Rivermont Avenue, Lynchburg, Va.

Dr. W. A. Lucas,

Who since the World War has been in the U. S. Public Health Service, being last stationed at Prescott, Arizona, has resumed his practice in Pulaski, Virginia.

Dr. Barton B. McCluer,

Who was temporarily at his old home, Bon Air, Va., after returning from West Virginia, is now located at Speedwell, Va.

Dr. Frank G. Simmons,

Who has for some time been associate physician in charge at Mt. Regis Sanatorium, Salem, Va., has returned to his former home in Richmond, Va.

Dr. Edward Bancroft is the new associate physician at this Sanatorium.

Dr. W. A. Shepherd,

Of this city, who was seriously ill from an attack of erysipelas, has resumed his practice and laboratory work.

Dr. S. R. Jordan

Has moved from Virgilina, Va., to Townsville, N. C.

Dr. Carrie Chase Davis,

Recently of Hopewell, Va., has accepted a position at the Southeastern State Hospital, at North Madison, Ind.

A Correction.

In giving names of officers of Sussex County Medical Society, in our May issue, Dr. W. D. Prince, Stony Creek, should have been listed as vice-president, rather than Dr. J. F. Slade of the same place.

Another State Journal.

The Louisiana State Medical Association announces that it has purchased the *New Orleans Medical and Surgical Journal*, to be used as its official organ.

We understand that the Mississippi State Medical Association also voted to accept this journal as its official publication.

St. Elizabeth's Hospital Issues Annual Report.

St. Elizabeth's Hospital, Richmond, has issued its annual report for 1921, giving statistics as to patients admitted, and report of diagnosis, operations, etc. So far as we know, this is the first of the local private hospitals to issue such a report, and it will be of interest to the profession to know exactly the results that have been obtained from various operations.

This hospital was opened in February 1912, as a private hospital for the care and treatment of Dr. J. Shelton Horsley's surgical patients. From time to time, the increasing demand for hospital service has necessitated enlargement. At present, the hospital can care for sixty patients. The present report covers the work at St. Elizabeth's during the first year of its administration under the "Group System," which was inaugurated there in September 1920.

Dr. Mary E. Brydon,

Of the State Board of Health, has been appointed by Governor Trinkle one of the commissioners at large to investigate as to the feasibility of establishing separate schools for the deaf and blind. The report will be submitted to the next General Assembly.

Dr. Junius F. Lynch,

Of Norfolk, Va., state commander of the American Legion, gave an address before the North Richmond Post, on May 16.

Dr. and Mrs. P. E. Tucker

Have returned to their home at Buckingham C. H., Va., after attending the Baptist Convention in Jacksonville, Fla.

Dr. Loren E. Cockrell,

Of Reedville, Va., has been elected a member of the board of directors, of the newly organized Northumberland Chamber of Commerce.

Dr. William C. Powell,

Petersburg, Va., has been appointed brigade surgeon of the Second Brigade, Sons of Confederate Veterans.

Dr. Clifton M. Miller,

Of Richmond, Va., was elected a member of the American Otological Society, at its last meeting,

Venereal Diseases Treated at Dispensary of M. C. Va.

In reports which have been submitted regularly by the Dispensary of the Medical College of Virginia, venereal diseases have been shown to be 16% of the total diseases treated there. In April, although the percentage was decreased to 13.4, venereal diseases led all of the diseases and conditions treated.

The Va. T. B. Association,

Which has recently won such Statewide attention because of its free diagnostic clinics, is now launching a new line of endeavor in the form of a Permanent Organization in each county which shall care for the local tuberculosis problem. This Association has left a total of over $33,000.00 in the care of local treasuries from the proceeds of the 1921 Christmas Seal Sale. Every effort is now being expended to coordinate local forces throughout the State in the wisest and most careful expenditure of this money.

All Ex-Service Men in Virginia

Who received decorations, citations or other official recognition for bravery or conspicuous service in the World War, and who have not sent copies of citations and official letters of recommendation to the Virginia War History Commission, Room 9, State Capitol, Richmond, Va., are urged to do so without delay.

The Commission is about to publish the official citation of every Virginian who has furnished the proper credentials. It is very important that this Distinguished Service List be made complete and if YOUR name should be on the Honor Roll, see that it gets there by posting a certified copy of your citation to the above address NOW.

The U. S. Civil Service Commission

Announces open competitive examinations for toxicologist, associate toxicologist, and assistant toxicologist, receipt of applications to close July 3, 1922;

Laboratorian and assistant laboratorian (roentgenology), applications to be rated as received until further notice.

There is also an urgent need at hospitals of the U. S. Public Health Servcie and establishments of the U. S. Veterans' Bureau for reconstruction aides in physiotherapy and occupational therapy, and also for dietitians, in connection with the rehabilitation of disabled soldiers, sailors and marines. The Commission will receive applications for these positions until further notice, applicants to be rated on subjects of education, training, experience, and physical ability, rather than by written examination.

Full information and application blanks for any of the above may be secured from the U. S. Civil Service Commission, Washington, D. C.

Dr. Paul V. Anderson,

Of Westbrook Sanatorium, Richmond, attended the twenty-fifth reunion of his class at Trinity College, North Carolina.

Dr. Olin West,

Nashville, for the past eight years secretary of the Tennessee State Medical Association, has resigned to become Field Secretary of the American Medical Association.

Alumni to Confer With Board of Visitors, M. C. Va.

Dr. Manfred Call, Richmond, newly elected president of the Alumni Association, Medical College of Virginia, appointed a committee of seven to confer with the Board of Visitors

and others in the discussion relative to the future expansion of their alma mater. The personnel of the committee is: Dr. H. U. Stephenson, Toano; Dr. Elisha Barksdale, Lynchburg; Dr. P. St. L. Moncure, Norfolk; Dr. Murat Willis and Dr. Alex. G. Brown, Jr., of Richmond; Dr. Harry Bear, Richmond, representing the dental alumni; and T. M. Toone, Richmond, representing the pharmaceutical alumni.

Appointed on Nurses' Board.

Miss R. N. Smith, a registered nurse of Norfolk, whose home is at Craigsville, Va., has been appointed by Governor Trinkle as a member of the Virginia State Board of Examining Nurses.

Location Wanted.

Protestant graduate of Medical College of Virginia in 1907, aged 40, who has been doing industrial work since graduation, wants a location in Virginia, in some good small town. Must be in a good community, with good schools and good roads. Will not object to doing some rural work on good roads and among a good class of people. Available about September 1st. Address No. 154, care this journal. (Adv.)

Wanted.

A few book agents to sell the new "Crowning Edition" of the celebrated "Book on the Physician Himself." Rare chance. Address the author, D. W. Cathell, M. D., Emerson Hotel, Baltimore, Maryland. (Adv.)

Wanted

A good location in Virginia. Address "S. G.", care Virginia Medical Monthly. (Adv.)

Wanted.

Physicians (Mental Diseases) $1,800 to $2,000 a year and Institutional Maintenance. Apply "State Employment Commission, 22 Light Street, Baltimore, Maryland." (Adv.)

Assistant Wanted.

Wanted physician with experience in general practice to do office work, x-ray and laboratory work in small town. Will arrange all training needed. Moderate salary, which will begin at start. Prefer a man who cannot get about or who does not like general practice. Send recommendations with first letter. Address "K. B.", care this journal. (Adv.)

Obituary

Dr. Hugh McGuire Taylor,

One of the best known physicians and surgeons of Richmond, an ex-president of the Medical Society of Virginia, and also of the Richmond Academy of Medicine and Surgery, died May 30, at his home in the suburbs of this city, after being in ill health for sometime. He was born in Clarke County, Va., 66 years ago and, after completing his academic education, studied medicine at the Medical College of Virginia, from which he graduated in 1876. He joined the Medical Society of Virginia two years later. Shortly after graduation, he was made demonstrator of anatomy in the Medical College of Virginia and continued on the teaching staff of that college until the organization of the University College of Medicine in Richmond, when he became professor in that school. At the time of his death he was emeritus professor of clinical surgery in the Medical College of Virginia. When the Medical Examining Board of Virginia was organized, he was appointed a member and, during his connection with the board served both as its secretary and president. Dr. Taylor was identified with a large number of medical associations, in which he took a prominent part and was several times honored by being made an officer in many of these. He was also a member of the vestry of All Saints' Episcopal Church, this city.

Dr. Taylor is survived by his widow, who was Miss Minnie E. Whitcombe, and a large family connection.

Dr. John Herbert Claiborne,

Son of the late Dr. and Mrs. John Herbert Claiborne, of Petersburg, Va., died at his home in New York City, May 27. He was born in Louisburg, N. C., about sixty years ago but spent his boyhood in Petersburg. He graduated in medicine from the University of Virginia in 1883. In 1887, he joined the Medical Society of Virginia and had been a member of this Society continuously since. While still quite young, Dr. Claiborne located in New York City, where he soon became prominently known as an eye specialist. He was president of the Southern Society of New York City as well as an active member of a number of patriotic and medical societies. He is survived by his wife, a son, and two sisters. The interment was made in Petersburg.

Dr. Joseph Nathaniel McCormack,

One of the most prominent medical men o. this country, died at his home in Louisville, Ky., May 4, at the age of 75 years. His death was due to cerebral hemorrhage. He graduated from Miami Medical College, Cincinnati, in 1870, and in 1873 was given the degree of M. D. by the University of Louisville. He made his home in Bowling Green, Ky., until 1910, at which time he moved to Louisville. He was an active and interested worker in medical and health matters of Kentucky and the whole country, and had filled many important positions in the American Medical Association, as well as in his local societies. He was an ex-president of the Kentucky State Medical Association and for many years a member of and secretary of the Kentucky State Board of Health. Dr. McCormack had been a non-resident, honorary member of the Medical Society of Virginia since 1903, and seemed always interested in the meetings, even when he could not attend.

Dr. Samuel L. Jepson,

Of Wheeling, W. Va., dean of the Medical profession of West Virginia, died May 2, at the age of 80. He was a native of St. Clairville, O., and a graduate in medicine from the Medical College of Ohio, Cincinnati, in 1868. Dr. Jepson was one of the most beloved physicians of West Virginia, and had many times been honored by the profession of his State. He was an ex-secretary and ex-president of the West Virginia State Medical Association, editor of the State journal for ten years, and State Health Commissioner from 1913 to 1921. He was faithful to all his duties and perhaps did more than any one man for the future of medicine in West Virginia.

Resolutions on Death of Dr. A. C. Fisher.

At a meeting of the NORTHERN NECK MEDICAL SOCIETY held at Warsaw, Va., on May 25, 1922, the following resolutions and preamble were adopted:

WHEREAS the Northern Neck Medical Society has heard with deep sorrow and profound regret of the death, since our last meeting, of Dr. A. C. Fisher, who was a charter member and ex-President of this Society.

THEREFORE BE IT RESOLVED, 1st: That the Society has lost in his death a wise counseler, the members a true friend, and his large clientele a skilled physician, self-sacrificing in his desire to minister to the relief of human suffering.

RESOLVED, 2nd: That a copy of trese resolutions be spread upon our minutes, published in the NORTHERN NECK NEWS, THE VIRGINIA MEDICA MONTHLY, and a copy be sent to the bereaved family to whom we tender our deepest sympathy.

Signed,

B. A. MIDDLETON,
C. T. PIERCE,
G. B. HARRISON.

Dr. John Allan Wyeth,

Widely known as author and teacher, died suddenly from heart disease, at his home in New York City, May 28. He was born in Guntersville, Ala., and had just celebrated his 77th anniversary. He served as a private in the Confederate army and in 1867 took up the study of medicine at the University of Louisville, from which he graduated two years later. He was the founder of the New York Polyclinic Medical School and Hospital, one of the first post-graduate medical schools in the United States, and was also the author of a number of essays and textbooks on anatomy and surgery.

Dr. Joseph Eugene Good,

New Market, Va., died May 7, from meningitis. He was 60 years of age and a graduate in medicine from Jefferson Medical College, Philadelphia, in the class of 1884. Dr. Good was for some years a member of the Medical Society of Virginia, having resigned only recently.

Dr. Robert Gamble Cabell,

Of Richmond, Va., died May 7, after a short illness, aged 75 years. He was a native of Richmond. As a cadet at the Virginia Military Institute, he entered the Confederate service during the war between the states. He gradated from the Medical College of Virginia in 1870. After practising for a number of years and later being in the drug business, he was appointed superintendent at the City Home of Richmond. He had held this position for nearly fifteen years. He is survived by three sons and a large family connection.

Dr. Franklin P. Gates,

Of Manteo, N. C., was found dead in a hotel in Norfolk, Va., May 23. He was dressed and sitting in a chair and it is presumed his death was due to heart trouble. He was 63 years of age and a graduate from Bellevue Hospital Medical College, New York, in 1886. Dr. Gates was a member of the Medical Society of the State of North Carolina and prominent throughout the eastern section of North Carolina.